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USAAF HEAVY BOMBER UNITS ETO & MTO 1942–45

JERRY SCUTTS

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AIRCAM/**AIRWAR** SERIES EDITOR: MARTIN WINDROW

USAAF HEAVY BOMBER UNITS
ETO AND MTO, 1942-45

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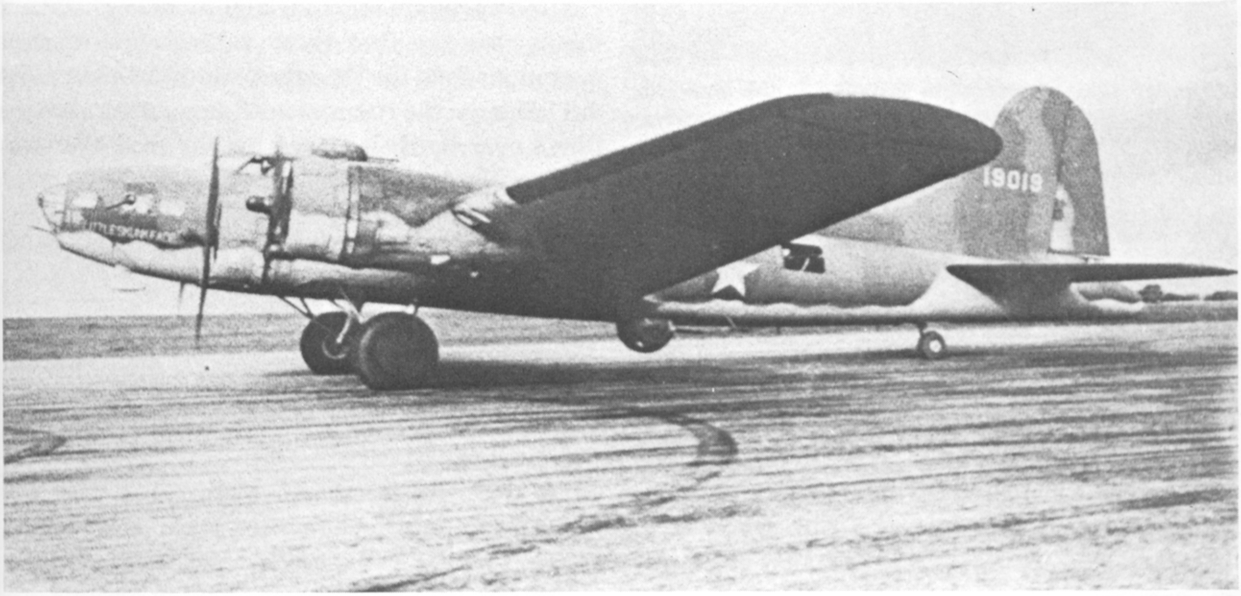
IN THE BEGINNING...

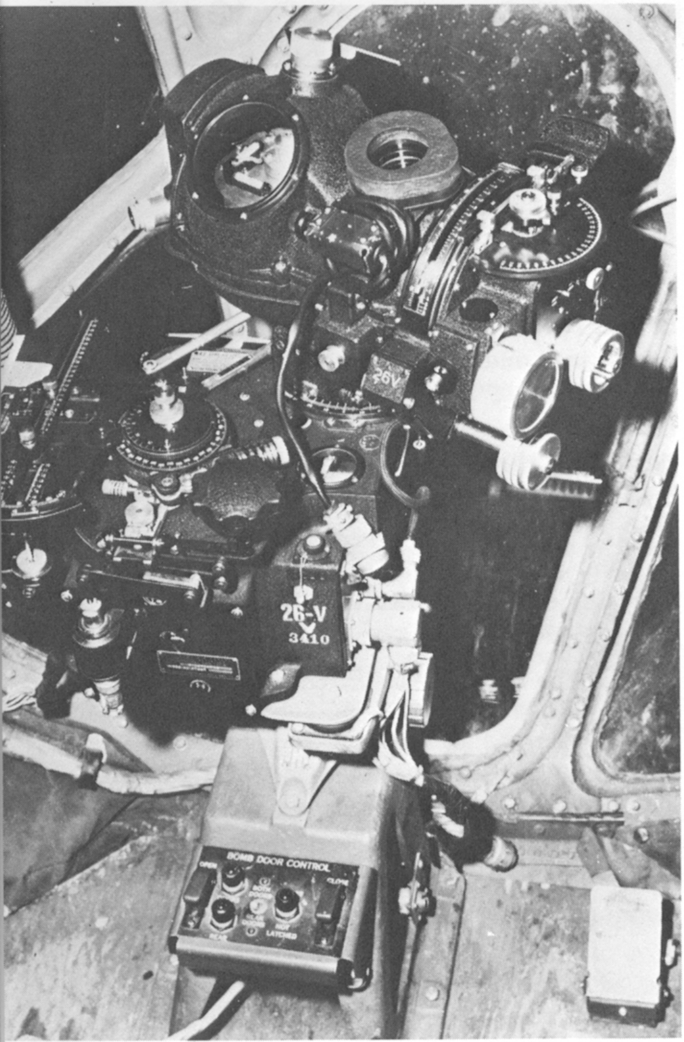
On 11 June 1942, twelve U.S. Army Air Force B-24D Liberators dropped 36,000 lbs of bombs on the oil refinery complex at Ploesti, Rumania, in the first American heavy bomber attack of World War II. Although damage to the target was slight, the mission was a significant portent of things to come – henceforth, the middle years of the war would see the US strategic bombing effort directed at the defeat of Nazi Germany, a policy outlined before Pearl Harbour. The Japanese attack meant diversion of some men and machines to the Pacific, but the 'Europe first' plan remained in being. A primary element of that plan was to establish a long-range bomber force in the British Isles to attack continental Europe and, by the time of the Ploesti mission, the first combat units had begun to move to England.

In April 1941 the Army Special Observer Group, headed by Maj. Gen. James E. Chaney, was established in London to prepare for the possible involvement of US air and ground forces in the European war. With British leaders, this group carried out the necessary groundwork to set up a heavy bomber command, which would be supervised by Maj. Gen. Carl Spaatz, chosen for the task by Gen. H. H. Arnold, commanding general of the AAF. To head the new command, Spaatz selected Brig. Gen. Ira C. Eaker, an officer with widespread military experience and a reputation for diplomacy.

Eaker arrived in England with a cadre of six officers on 20 February 1942. On the 22nd, the US Army Bomber Command was formally created and Eaker and his staff embarked upon a six-month study of RAF Bomber Command operational techniques. There was some conflict with Chaney



1. 'Little Skunkface', B-17E 41-9019 of the 97th BG in light earth and dark green upper surface camouflage seen on some of the group's aircraft on arrival in England, summer 1942. (USAF – as are all photographs not specifically credited to other sources.)



2. Norden Mk.15 bomb sight installed in the nose of a B-24; the sight proper, with its 2.5 power telescope, was mounted on top of the computer and stabiliser housing.

and his staff over the need for an autonomous AAF command, but Arnold insisted. With the arrival of Spaatz on 18 June, 8th Bomber Command was officially established in the UK. Spaatz made his headquarters, known by the codename *Widewing*, at Bushy Park, while Eaker, initially working from RAF Bomber Command HQ at High Wycombe, moved into Daws Hill Lodge at nearby Naphill. The former stately home would be known as *Pinetree* for the duration of the USAAF occupancy.

The building of an effective striking force was an immense task for the Americans, not the smallest problem being British scepticism for the concept of precision bombing in daylight without fighter escort. In view of the RAF experience of day bombing raids in the early months of the war these doubts were understandable; but British operations had not been carried out with large formations of well-defended bombers. USAAF planning also appeared to overcome the disparity of bomb-carrying capacity between British and American types; using the advanced Norden sight, the US aircraft intended to hit specially selected targets vital to the enemy's war economy, using fewer bombs than were necessary for the RAF's night area attacks. It was made clear, however, that despite their heavy armament the day bombers would need fighter protection and, in view of the unsuitability of the then-available US types for combat over Europe, this would initially be provided by the RAF. The plan certainly had flaws and the British would have preferred the USAAF to join their own assault on Germany by night – but there was a keenness to see the Americans take an active part in the European war which was shown by unstinting help. Co-operation was, in Eaker's words, 'One hundred per cent in every regard.'

Along with vast amounts of support equipment, personnel and some aircraft, a nucleus of airfields was allocated in East Anglia and joint planning continued pending the arrival of the first US aircraft and crews.

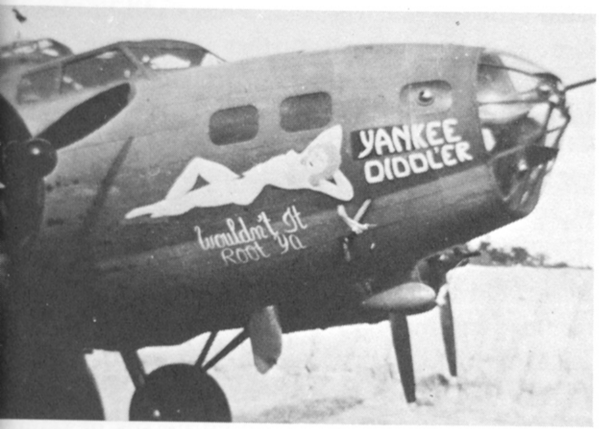
The demands of other theatres for heavy bombers meant that the first three B-17 groups to start operations from the UK – the 97th, 301st and 92nd – did not cross the Atlantic until June. Aircraft were flown over by their crews, usually from the west coast of the USA, a long haul of some 3,500 miles with stops at Goose Bay, Labrador, Reykjavik, Iceland, Bluie West 1 or West 8 in Greenland and Prestwick, Scotland. The first eighteen B-17Es of the 97th Bomb Group left the US on 23 June and reached Scotland on 1 July.

Once established in England, the 8th Air Force was divided into four commands: Air Service, Ground-Air Support, Fighter and Bomber. The latter was initially sub-divided into wings (the basic tactical unit, each with three groups) and groups (the basic operational unit, each with four squadrons). In 1942, average squadron strength was eight to ten aircraft – later increased to fourteen – flown as flights of six and elements of three.

Each group also had a headquarters establishment. A USAAF bomber squadron was therefore roughly equivalent to an RAF squadron, although the group, equal in size to a British wing, became the more commonly known basic unit – strength was usually reckoned in terms of groups rather than squadrons.

Polebrook and Grafton Underwood in Northamptonshire were the first two airfields taken over by the 8th's bombers, and the 97th Group was fully installed by 27 July. At first each US bomb group was dispersed to two airfields, but almost immediately it was seen that a single base would facilitate servicing and administration. In due course, the American bombers would occupy 75 of the total of 250 bases used by the 8th Air Force in the UK. Each bomber base cost the US and British taxpayer about £1 million, and £645 million would be spent on all USAAF airfields and installations, the US Government contributing £40 million.

As the number of men and machines slowly increased, an intensive theatre training programme was put in hand. Few crews had had time for adequate practice in formation flying, radio procedures, gunnery and so forth before leaving the US, and the air over East Anglia was soon alive with Fortresses as the squadrons began to form themselves into efficient fighting units. RAF and USAAF Spitfire squadrons flew dummy interceptions for the 'heavies', both to develop defensive tactics and to make the British fighter's lines familiar to American gunners.

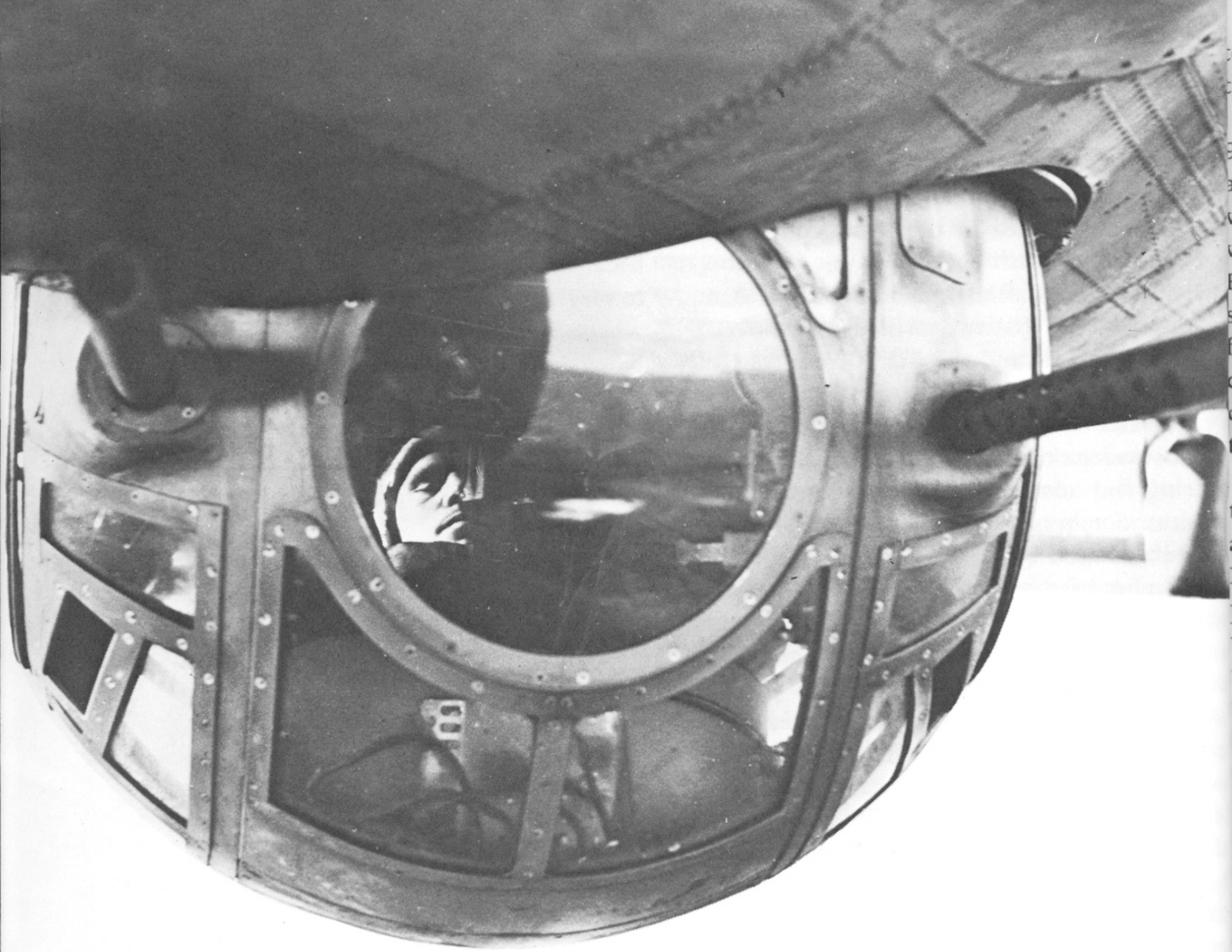


3. Believed to be a 97th BG machine, B-17E 'Yankee Diddl'er' displays a type of marking very common on wartime USAAF aircraft. (E. R. McDowell.)

Apart from all the technical and procedural details that faced the Fortress crews, there was the English weather, which came as an unpleasant shock to men used to fine flying conditions for weeks on end back home. Right from the start, when the first mission to France had to be rescheduled twice because of it, the weather was a hazard which was to plague the 8th. It was not only the flying crews who were affected. In those early days some of the bases provided for bomber squadrons were far from complete; hardstandings, taxiways and access roads had an annoying habit of disappearing under a sea of mud after heavy rainfall, making more tasks for the hard-working ground personnel. Any aircraft unlucky enough to roll into the mire had to be laboriously extricated and cleaned to prevent any clogging of wheels or brake lines. Bombs stacked in the open pending the completion of a sheltered dump had to be hosed down before loading, as they would not fall correctly if caked with mud.

The small force gradually came to terms with the deprivations of its new home and by early August, the 97th Group was deemed ready for its combat debut. Aircraft drawn from its squadrons would fly as a main force of twelve and attack the marshalling yards at Rouen-Sotteville, the B-17s using a formation pattern that had been worked out during training. It was found that the basic element of three aircraft could best defend itself against fighter attack by flying a V-formation, with each machine at a slightly different altitude. Each flight, or battle formation, flew as an integral part of the combat 'box', which was usually composed of eighteen to 21 aircraft. This main formation was sub-divided into three staggered boxes of six aircraft, each comprising the lead, high and low squadrons. Typical altitudes for each were the first (lead) squadron at 25,000 feet, the second (high) squadron at 25,100 feet and the third (low) squadron at 24,750 feet, all three formations occupying an area of sky some 750 feet deep. An entire combat wing of B-17s, made up of three combat boxes, would be stacked up some 3,000 feet.

Selection of targets was a lengthy process that originated with the Combined Chiefs of Staff of England and the US, who selected the target categories. A Target Selection Committee of military



4. No place for vertigo sufferers – the B-17's ball turret, inhabited here by T/Sgt. Benedict B. Borotowski. The turret tracked very swiftly on a 'universal joint', giving an excellent field of fire.

and economic experts then considered the objectives in each category and decided on their priority. This information was passed to the 8th AF Bomber Command HQ, where the Commanding General chose the targets best suited to his force. His decision was communicated to the Combined Operational Planning Committee, which included representatives of Fighter, Air Support and Bomber Commands and the Intelligence divisions of the RAF and USAAF, for determination on the general plan of action to deal with selected targets. The COPC then decided upon the routes, times and possible diversionary raids required, based upon existing knowledge of enemy defences. Every target plan was given a codename, circulated to the Bomb Wings and thence to Group HQ for filing.

When the Commanding General decided th conditions were right for a given target to attacked, Bomber Command HQ would prepare Combat Order from the plan, which was modifi to take in more up-to-date information; this w then sent via teleprinter to Wings and in turn, Groups. At each stage, further information wou be added by the various staffs to alert their partic lar personnel who would be involved in the missio

Groups were usually warned the precedi afternoon to prepare a certain number of aircra for a mission the following day. They allocat individual machines, plus spares, so that the mech nics could begin their checks, bombs be prepar for loading and crews warned to stand by. T decision to go or not was taken at about 1700 h during the Daily Operations Conference at 8 AF HQ and during the evening details of fight support, radio procedures, bombing altitudes a weather conditions was sent out to Wings, then to Group HQ for distribution to the combat units that would fly the mission.

At 3.26 pm on 17 August 1942, six B-17Es of the 97th Bombardment Group took off from Polebrook and turned for the English Channel. These machines were a diversionary force to draw off the Luftwaffe while the main force, led by the 97th's CO, Col. Frank A. Armstrong, headed for Rouen under a strong umbrella of RAF Spitfires. The weather had finally cleared over the target and the bombers dropped their loads accurately from 23,000 feet, causing damage to rolling stock, buildings and track.

All the B-17s returned safely to the congratulations of Americans and British alike and considerable publicity for the first mission by the 8th Air Force. Few members of that handful of crews were probably more relieved to return to English soil than Eaker, who had gone along as an observer in the aptly-named B-17E *Yankee Doodle*. For him, with the tremendous responsibility of getting the force operational, the raid could not have come soon enough. His urgency was understandable, as the 8th's most experienced crews would not remain in England long. Three days after Rouen, the 12th Air Force was formed to support the top-priority 'Torch' landings in Algeria and French Morocco, scheduled for November. As the only source of combat-tried crews in Europe the 8th would have to loan groups to the Mediterranean theatre and train crews destined for the 12th AF.

LESSONS & LIMITATIONS

With the Spitfires unable to shepherd the heavies much further south than Paris or east than Rotterdam, the 8th was unable to do much harm to the German war machine in 1942. But the crews learned their trade as they delivered bombs on factories, airfields, naval facilities and rail networks in 30 missions to France and the Low Countries. The Luftwaffe, cautiously weighing up its tough new adversaries, reached the B-17s for the first time on 21 August when they rendezvoused late with their Spitfire escort. One Fortress pilot was killed by cannon fire from an Fw 190, and bomber gunners made the first of their enthusiastic claims for fighters shot down. Although these figures were good for morale – especially if the bombing had been poor – time would show that only a tiny proportion of them were related to actual German losses. Not that the enemy was underestimated; comments like, 'You gotta hand it to Jerry – he's a beautiful flyer and boy, has he got guts!' said it all.

Fighters and flak were not the only dangers faced by bomber crews. Much of their own equipment left something to be desired. Cold was a constant discomfort and oxygen was necessary above 10,000 feet. Above 20,000 feet the B-17E's constant flow oxygen system was, in the words of one crewman, an 'abomination' and a close watch had to be kept on each man's breathing bag, which could freeze condensation and lead to anoxia. Later aircraft had a demand system with an eyelid indicator for each position with a 100 per cent bypass. Men soon learned that to be without oxygen for five minutes at an altitude of five miles meant unconsciousness and, in twenty minutes, death. Gunners wore electrically-heated flying suits under heavy leather suits to combat the cold and great care was taken to ensure that all connections were secure and that the clothing had no exposed openings, which could lead to severe frostbite at altitude. Touching the exposed metal of the aircraft or a machine gun without a glove in temperatures of 40 degrees below zero could mean the loss of a finger. Fortress pilots were much more comfortable and able to fly without the cumbersome suits, thanks to a very efficient cockpit heating system.

Lt. Col. Curtis LeMay, CO of the 305th BG at Chelveston, also pointed out the dangers of taking guns aloft without removing any excess oil. This would freeze at altitude, rendering the weapon useless, but putting the fact over was hard work: 'We couldn't convince a man that he shouldn't oil his guns – not until he got up there and found those Jerries. If he survived, the next time he washed the movable parts of his machine gun in gasoline.' These and a host of other problems led LeMay to comment: 'We were a pretty sorry lot in 1942. Many people didn't live long enough to learn much.'

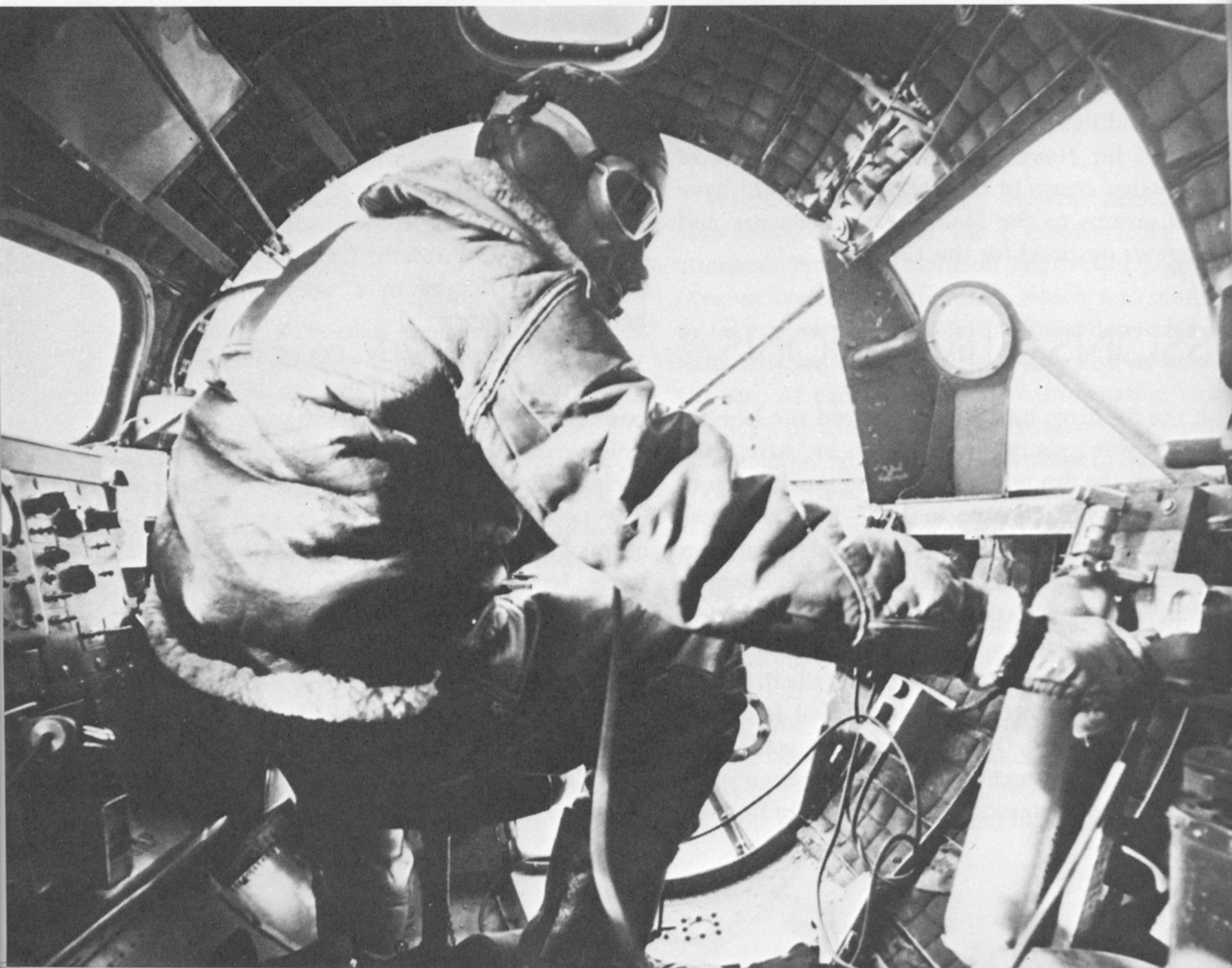
The gunnery problem would persist, not so much in the care and use of weapons, but in accuracy o claims made in the heat and speed of combat, where the rapid identification of friend from foe was extremely difficult. After a number of incidents of Spitfires being fired on by the heavies, a system was introduced whereby the 'little friends' would sweep ahead of the formation and leave rear defence to the gunners. And it was not only British fighters that sometimes suffered from misdirected fire – on occasions, B-17s came home with American .50 cal. bullet holes.

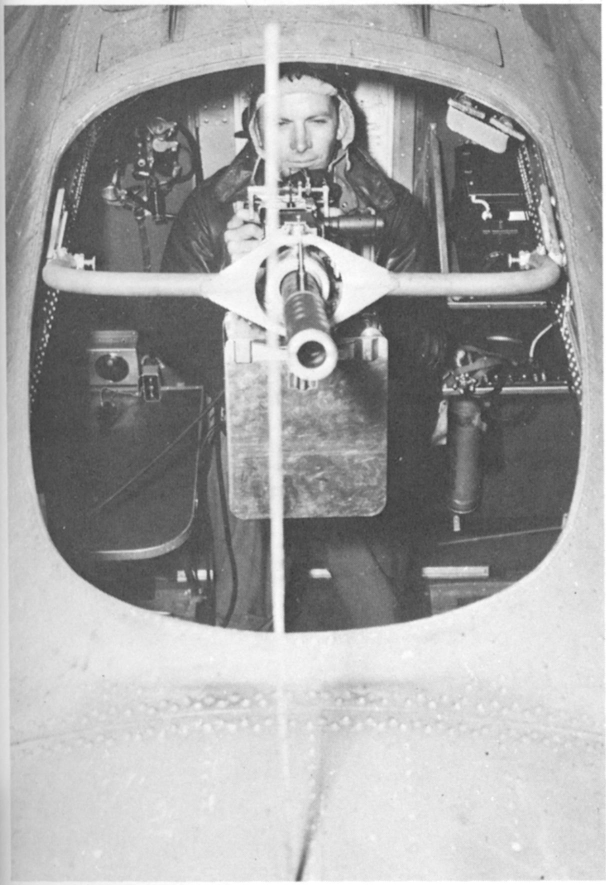
To cut the embarrassingly high claims for downed enemy fighters, a four-point checking system was used. A fighter was not recorded as a positive kill unless it (1) exploded in the air; broke up in the air; shed a wing or tail section; or the motor was shot out of a single-engined type; (2) it was seen to be enveloped in flames or the flames were intense; (3) it was seen to crash on the ground or fall into water; (4) the pilot of a single-engined type was seen to bail out.

These rules, plus intensive de-briefing, had a effect, but claims remained optimistic. Confusio arose when German fighters emitted black smok from their exhausts as the throttle was ramme forward to power-dive away after attacking – man crewmen interpreted this as the sign of a cripple aircraft going down in flames.

One thing was certain – when the Germans bega to adopt head-on attacks on USAAF heavies, bot the B-17 and B-24 were found to be deficien in nose armament. Local modification by the combat units and Air Service Command enabled up t three more guns to be mounted in the perspe nose cone of the B-24D and two in the B-17E and models. Aircraft that had arrived from the U with a nose-mounted 0.30-in machine gun had thi lighter weapon replaced by a 0.50; flush-fittin cheek windows were modified so that the gun

5. B-17E bombardier – note sockets in nose cone and cheek window for additional 0.50 cal. machine guns to overcom the weak head-on defence of early Fortresses.





6. Radio room gunner of 'Hell's Angels', B-17F 41-24577, VK-D of 358th BS, 303rd BG from Molesworth; wooden box under gun collected empty shells.

could point directly ahead, and many bombers had two 0.50-in guns lashed together to fire from the apex of the nose cone. Such armament variations would continue until the B-17G and later Liberator models standardised on twelve or thirteen, and ten guns respectively. At the end of hostilities, eight guns were the norm for the Liberator and ten for the Fortress, the ball turret in both types often being replaced by a radar housing.

The 12th AF training task and the transfer of groups presented Eaker and Spaatz with the dilemma of convincing those who still doubted the value of the US strategic bombing programme in Europe with pitifully few aircraft. Two Fortress groups, the 92nd and 301st, came to England equipped with the B-17F, which was a great improvement technically over the E models flown by the 97th. The 92nd passed its aircraft to the experienced 97th and, to facilitate the theatre training programme, became a crew replacement pool through which all freshman groups would pass before flying combat. The 92nd would, however, 'make up the numbers' on certain operations.

The 301st Group went operational on 5 September, when the 8th was able to despatch 37 B-17s on a second visit to Rouen. The following day a force of 54, including some 92nd Group machines, bombed the French aircraft plant at Meaulte, the mission recording the first Fortresses to be lost in combat in Europe when the Luftwaffe penetrated the Spitfire screen and shot down two.

The weather intervened to such an extent in September that the heavies ventured out only twice more. On 9 October a record force of 108 was targeted for the steel works at Lille, the mission including B-24D Liberators of the 93rd BG based at Alconbury for the first time. Overall bombing was poor considering the number of aircraft involved, although the target was badly damaged.

Using standard US and British bombs no heavier than 2,000 lbs, the small force of USAAF heavies had a hard task to damage their targets effectively in 1942. Many direct hits were required for any lasting destruction with general purpose HE bombs – the targets were certainly being hit, as reconnaissance showed, but the photographs could not indicate the amount of actual damage done to equipment inside apparently-demolished buildings. There was also limited up-to-date information on the targets and this, together with the need to ensure the minimum possible civilian casualties, made for an exacting task for inexperienced crews.

That the B-17s and B-24s were able to bomb accurately was largely due to the Norden Mk. 15 sight, one of which was installed in each aircraft during the opening phase of the 8th Air Force offensive. The Norden had a gyro-stabilised autopilot known as SBAE – Stabilised Bombing Approach Equipment – enabling it to take over control of the aircraft during target run-in. A typical service crew was thus able to return good bombing results – a consistent average of within 50 feet of a practice target was recorded during Stateside training. The Norden sight weighed 45 lbs and had over 2,000 working parts; it was essentially two electric gyros – one directional to correct any deviation of the aircraft's course, and

7. On 4 April 1943, B-17s from the 97th and 301st BGs attacked port installations at Naples; 'Avenger' was one of the Fortresses which took part. A number of the 21 missions displayed were flown with the 8th AF.

one flight gyro to monitor vertical pitch. The sight was a powerful telescope mounted on top of the stabiliser, with a computer and a gyro to keep the sight steady.

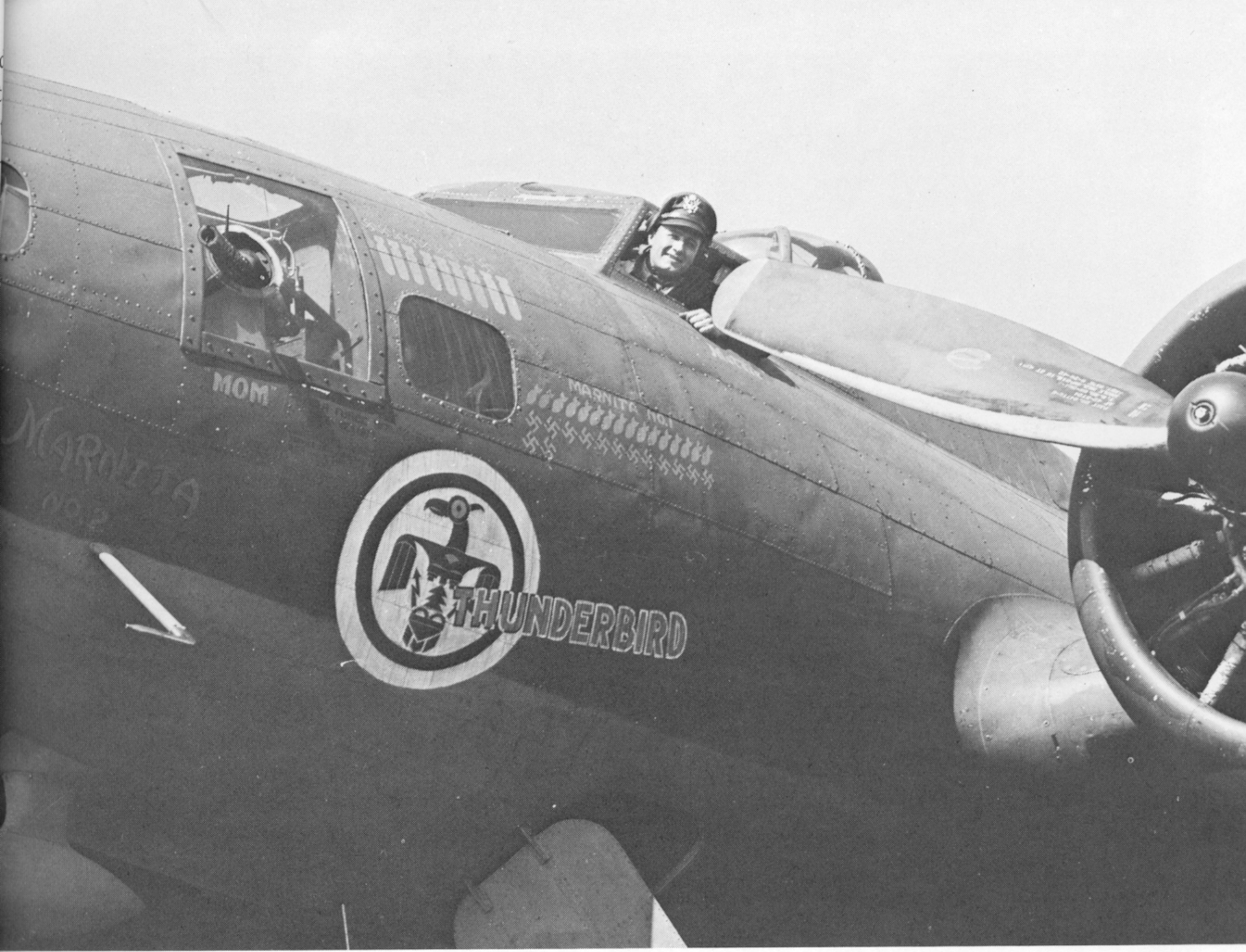
To use the sight, the bombardier fed basic data to the computer, including the time the bombs would take to fall depending on altitude and speed of the aircraft, the point the bombs would hit after the machine had passed over the target, known as the trail, and the degree of drift. With the target in sight, the bombardier aligned the telescope, set the drive and cut in the SBAE for a rock-steady bomb run. Linked rudder and aileron servo motors enabled gentle banking turns to be made under its control and a secondary switch linked the rudder to eliminate bank, depending on requirements. The aircraft was held steady by the stabiliser until the telescope had tracked the target to the correct dropping angle, and the bombs were released automatically.

If press reports tended to over-exaggerate the accuracy of the Norden sight, the fact remaine that some impressive results were obtained with i One big drawback was that it was a visual sigh and could not be used in overcast conditions which all too often prevailed over Europe. A secon disadvantage lay not with the Norden itself, bu the method of using it. In the early days eac bombardier selected his own target or part of target and the formation separated at the IP Initial Point – for individual aircraft to drop thei bombs. It was at this point that fighter attack and ground fire were usually at their most intense so this procedure did nothing to help alread vulnerable aircraft and often led to bombs bein scattered over a wide area. Consequently, the 8t changed its tactics. From January 1943, one experienced bombardier would feed the correct co-ordinates into his sight and drop his bombs whereupon the rest of the formation would follow suit. In this way the tight defensive formation remained intact and bombing improved considerably.

There was no denying that a straight and level approach, held for some minutes, gave the flak gunners a theoretically better chance of picking the bombers off, but the risk was considered acceptable if the target was well patterned. The originator of the lead bombardier system was Curtis LeMay, who was unwilling to take the loss of men and machines without trying to change things for the better. In his view, the 8th Air Force might just as well have stayed at home if bombing, its *raison d'être*, did not improve; the results were small enough, even if every aircraft scored a direct hit with every bomb it carried.

It was perhaps fortunate that men like LeMay did not realise that some targets were invulnerable to conventional high explosive, however well aimed. Submarine pens were particularly difficult to destroy due to their immensely strong construction, and it would take missiles of the British 'earthquake' variety to finally demolish them. In many instances, the true effects of American bombing would not really be known until the targets could be examined at first hand.

Frequently it was the case, as testified by Reich armaments minister Albert Speer, that an American precision attack caused serious damage, but was

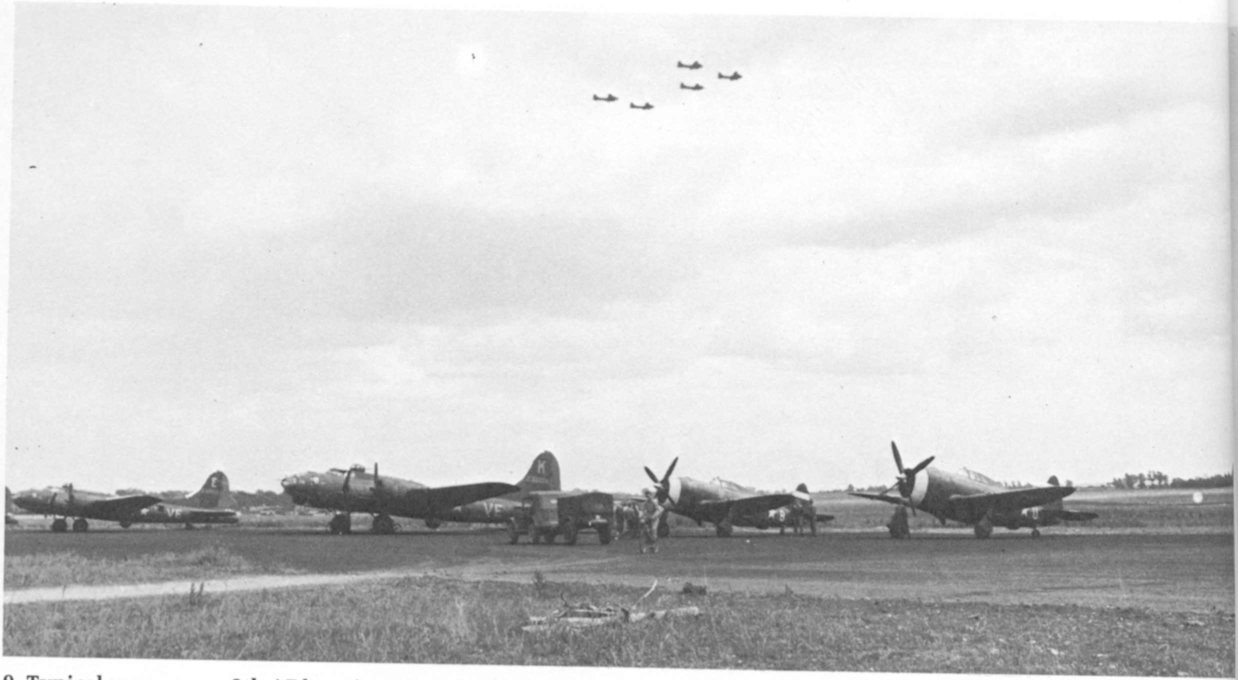


8. Lt. John C. Kaufman of the 322nd BS, 91st BG in his B-17F 42-5724, variously named 'Thunderbird' and 'Marnita No. 2.'. Nine missions completed and nine kills claimed are marked on the nose; this photo was taken on 19 June 1943. The aircraft was obviously a replacement for 'Marnita No. 1', whose scoreboard of sixteen missions and fourteen claims is also carried.

not followed by two or three more strikes that would have crippled a given installation beyond economic repair. As it was, the diligent and resourceful Germans were able to make good in the ample breathing space they were often allowed, either because the target *was* thought to be inoperative, or because it had a low priority on the USAAF target list. The weather played a significant part in restricting effective repeat attacks, not to mention prohibitive losses of aircraft and crews from the defences.

Any interruption of the bombing programme, especially by bad weather, imposed an added strain on combat crews, for it meant postponement of the day when their required 25 missions had been completed. Waiting for a mission go-ahead was often a greater strain than actually facing the fighters and flak, and men sought solace in talismans and superstition to conquer fear. There were many rituals in vogue with aircrew, any departure from which was regarded as a portent of doom. Some crews would always leave their bunks unmade on the day they were flying, as each man fervently believed that he would soon return to catch up on his sleep.

The spirit of the USAAF bomber crews was reflected in the names and artwork that adorned many of their aircraft, despite official disapproval when the girls were a little too seductive or the clever names had a clear double meaning! Luck also figured in these paintings and names – some crews would not think of changing the name of a bomber they had inherited, even if the meaning of the embellishments was lost on the new owners.



9. Typical scene on an 8th AF base in July 1943; Ridgewell, Essex, home of the 381st BG. B-17Fs of the 532nd BS include 42-30034, VE-K, and 42-30013, VE-E, but the visiting P-47 Thunderbolts cannot be identified.

If fear was a personal feeling that each man lived with, there were times when bomber crews were chagrined to read of their exploits in certain magazine articles specially packaged for 'the folks back home', in which fear had no place. In June 1943, a B-17 gunner succinctly summed up his feelings about such journalese:

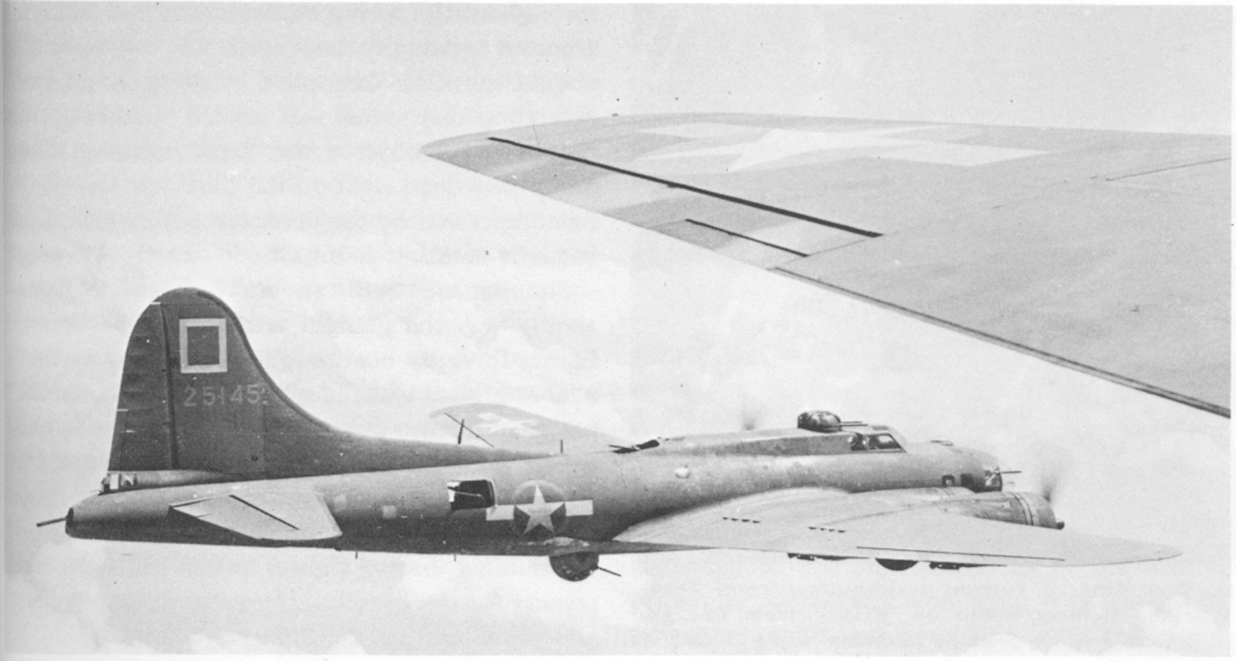
'I read a very nice piece in a magazine about us; it says we've got nerves of steel. We never get scared. All we want in the world is just to fly all the time and get a crack at Jerry. I never heard anything so brave as us. I read it three or four times to try and convince myself that I ain't scared.'

* * *

With the first 8th AF operations appearing to vindicate American bombing policy, a new plan was drawn up at the end of August 1942, known at AWPD-42 – Air War Plans Division, Air Staff, 1942. The plan optimistically predicted that by late 1943 the 8th could neutralise 177 selected targets in seven main categories, headed by aircraft plants, in preparation for an invasion of Europe. Submarine yards came second on the list, and transportation third.

To support the North African landings on 7 November, a series of missions was laid on from England to hamper German submarine operations along the western coast of France. These targets became increasingly dangerous due to heavy concentrations of flak, although they were still in range of escorting Spitfires and losses to enemy fighters were minimal. By the end of November the 8th had six operational groups, four with B-17Fs and two with B-24Ds, the Fortresses of the 97th and 301st Groups having departed for the MTO after flying fifteen and nine missions respectively from England.

Under the operational control of the 5th Bomb Wing, aircraft of the 97th Group flew their first MTO mission from Maison Blanche, Algiers on 16 November. Using British bombs, the B-17s attacked Sidi Ahmed airfield at Bizerte, and two days later, under the escort of 14th FG P-38s; El Aouina airfield near Tunis, destroying a number of enemy aircraft. By the end of the month the balance of the 97th and 301st were in the theatre, to come under the administrative control of the 12th AF. Liberator units were part of the 9th AF, formed on 12 November 1942, and both bomber types would be absorbed by the 15th AF at the end of 1943.

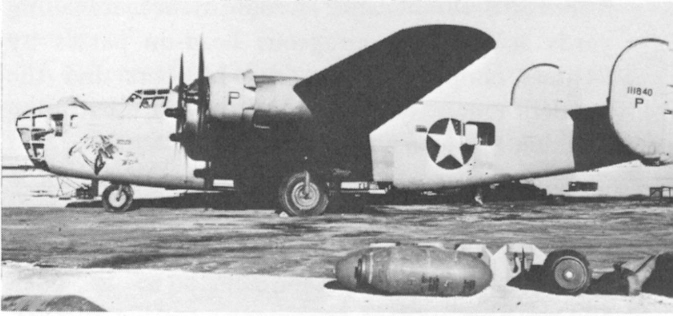


10. Heading for Viterbo, Italy, on 28 July 1943, B-17F 42-5145 of the 301st BG bears the yellow square identifying the group within 5th Bomb Wing. Note recently added white bars on the national insignia, without red outline.

For some six months from the start of operations in the Mediterranean, the heavies pounded targets in support of the desert armies until the successful end of the Tunisian campaign in May 1943. Although the B-17 crews found conditions at Tafaraoui – their base until December 1942 – even more primitive than those in England, at least the weather was better!

Five days before Christmas, the 8th AF B-17s received a foretaste of what would happen when they penetrated beyond the Spitfires' limited range. On a mission to Romilly-sur-Seine, six were shot down before fresh British fighters arrived to give target withdrawal support. Great numbers of German interceptors were observed, however, and the light loss percentage of the force of 101 despatched did not shake belief in the 'self-protecting' formation.

By the time of the Casablanca conference in January 1943, initial British doubts over the value of US strategic bombing had increased and Eaker was again pressed to join the RAF night offensive. He refused and presented a convincing argument for USAAF policy, countering the query as to when the American heavies would be sent against a German target by stating that the first such mission was imminent. During his discourse on daylight bombing, the 8th AF commander put forward the 'round the clock' attack plan that greatly appealed to Churchill and other Allied leaders present. These deliberations were to result in the Combined Bomber Offensive – CBO – or *Pointblank* Directive, which slightly revised the priority of targets in AWPD-42. Submarine construction yards were now first, with the German aircraft industry second, transportation third and



11. Built at San Diego, B-24D 41-11840 'The Witch' of the *Pyramiders* ended her days in a Bulgarian wheatfield after the 'Tidal Wave' mission to Ploesti. She chalked up some 40 sorties first, and is photographed here at El Kabrit, Egypt, with twelve of them marked below the cockpit in the form of little witches. Ships named after Disney characters were common in the 343rd Bomb Squadron. (H. Levy.)

12. Don King, a Fortress waist-gunner from Texas. Attacking fighters would be 'passed' from one gun position to another over the intercom, using clock code to warn of their position relative to the bomber.

oil plants fourth. The intention was that the USAAF and RAF bomber commands, attacking by day and night, would allow the enemy little respite.

On 27 January 64 B-17s struck an 8th AF target in German territory for the first time. The bombs actually went down on Wilhelmshaven, the secondary objective, as the submarine yards at the primary, Vegesack, were obscured by cloud. Luftwaffe fighters did not press attacks and only one Fortress failed to return. Things changed on 7 February, when Europe's unpredictable weather forced 86 B-17s to scatter en route to the marshalling yards at Hamm. Courageous head-on passes by fighters chopped down four bombers and the startled crews were sobered by the shattering collision between a B-17 and a Focke-Wulf.

The 8th returned to Vegesack on 18 March, a day that was to see the award of the first Congressional Medal of Honor to one of its crew members. It went posthumously to Lt. Jack Mathis, who, as lead bombardier for the mission, dragged himself back to his bomb sight after being mortally wounded by a flak burst.

On the Bremen mission of 17 April, the 8th lost 16 B-17s out of a total of 106 attacking the Focke-Wulf plant – the worst loss to date. But Eaker's 'acceptable five per cent' loss ratio was maintained throughout the spring and summer, and bombin accuracy gradually improved. On 14 May, th target was Kiel. One pilot of *Jagdgeschwader* defending that sector was moved to comment o the strike: 'I observe the Yank bombing. The dump their load right on the Germania shipyards I am impressed by the precision with which thos bastards bomb: it is fantastic.'

Simultaneous with an improvement in bomb aiming was the gradual attrition of the Germa fighter force by bomber gunners. It was nowher near as high as was thought at the time, but at tha period of the war even one pilot killed was anothe gap in the Luftwaffe's élite, a gap that would no be filled by the replacements who had little tim to gain experience before the Allied onslaught o 1944. Most enemy fighter pilots had a health respect for the heavily-armed American bombers and provided that the tight combat box could b maintained and was not allowed to become sloppy gunners usually gave a good account of themselves

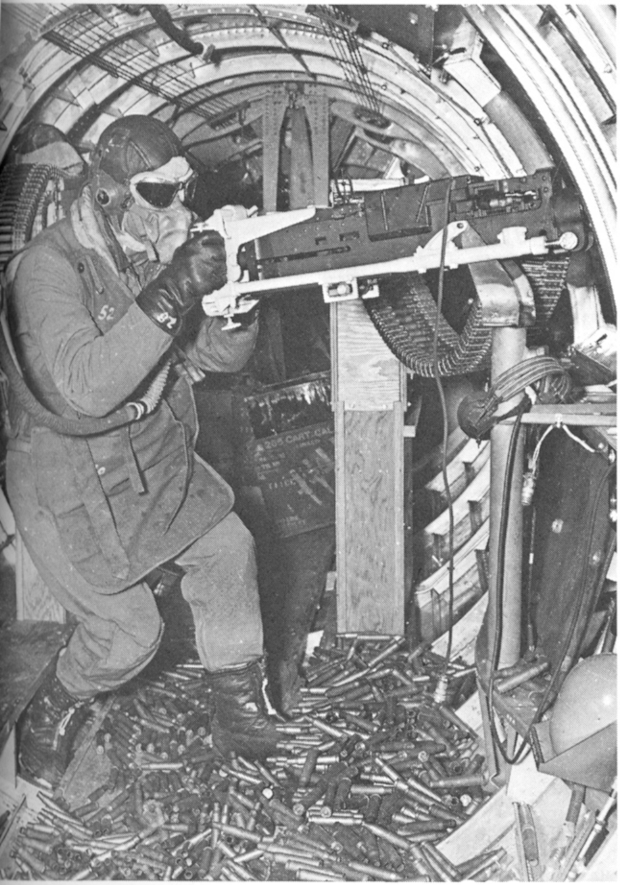
The B-17 groups were more fortunate than thei sister units flying Liberators in the requiremen for good formation-keeping. The B-24 was handful to fly tucked into the slipstream of othe aircraft, due to its high wing loading, and at comba weight many pilots considered it to be underpowered. Liberators often flew just short of a high-speed, or secondary, stall and very delicat juggling of the throttles was necessary to maintai station throughout a long mission – an extremel fatiguing business for the pilots.

The demanding job of bringing the Liberato combat boxes together in the early stages of a missio was alleviated to some extent by the formatio lead ships. In their ultra-bright paint schemes these aircraft used flashing lights and flare signals to provide an aerial marshalling point visible for some miles.

Another reason why men tended to swear by the Fortress was the amazing amount of battle damage it could sustain and still get home for a reasonably safe crash-landing. With its big, low-set wing, the B-17 could be put down with little danger of breaking up, but there was no such cushioning effect from the B-24's high mainplane if the landing gear was inoperable. Often a badly-damaged Liberator would 'squash' in a belly landing, resulting in extensive damage or a write-off.

A great deal of bomber damage resulted from the intense flak barrages that defended major targets throughout hostilities. But there was a strategic bonus in the weight of steel being thrown up at the attackers, even if it could be but small comfort to the crews on the receiving end. Apart from the high proportion of industry that had to be engaged in the production of anti-aircraft guns and ammunition, the Allied bomber offensive was to tie up thousands of German combat troops to man those guns – troops who would otherwise have been able to swell the ranks of the ground armies.

German fighters tried a variety of tactics to break up the USAAF formations, including rockets fired by both single and twin-engined types outside the range of American 0.50-in guns, free-fall aerial bombing, and bombs trailed through formations on the end of cables, all of which met with limited success; but there was no real substitute for the skilfully flown single-seat interceptor armed with heavy cannon.


13. In full combat gear, including flak vest and oxygen, S/Sgt. Robert L. Taylor wields a .50-cal waist gun in a Fortress just back from a mission – note the characteristic sea of empty shells on the deck. Ammunition feed varied; this aircraft has belted cartridges fed from vertical wooden boxes.

With Eaker appointed to head the 8th Air Force on 16 February 1943 when Spaatz was elevated to command all African air operations, both men remained confident that the requirements of AWPD-42 could be met, given an adequate number of new groups. The repair crews performed miracles through the winter to keep the B-17s and B-24s that were available in operational condition, many being relegated to 'hangar queen' status to provide parts for others.

Keeping the bombers flying was often quite a challenge to the slim resources of the 8th. In principle, Air Service Command was responsible for major repair and overhauls, with the groups carrying out first line maintenance; but with a separate chain of command, ASC did not always work to the same schedules as the combat units. Initially, each squadron of a group had its own specialist servicing sections that dealt with electrics, airframe repair and so forth. But this system resulted in an imbalance of work-load on many occasions, when one squadron's aircraft suffered greater damage than those of another, and efforts were made to pool resources for the group as a whole. Again, Curtis LeMay was quick to see the advantages of this; the 305th BG abandoned the traditional crew chief concept and introduced centralised servicing, which spread the maintenance load evenly.

A different kind of problem was that of operating both bomber types in the same formation. Due to their differing performance and poor handling above 21,000 feet, the Liberators had to be sent in some 4,000 feet lower than the B-17s, at around 21,000 feet, where they were more exposed to the defences. To prevent prohibitive losses, many 8th Air Force Liberator missions at this time were of a shallow penetration or diversionary nature, under strong fighter escort.

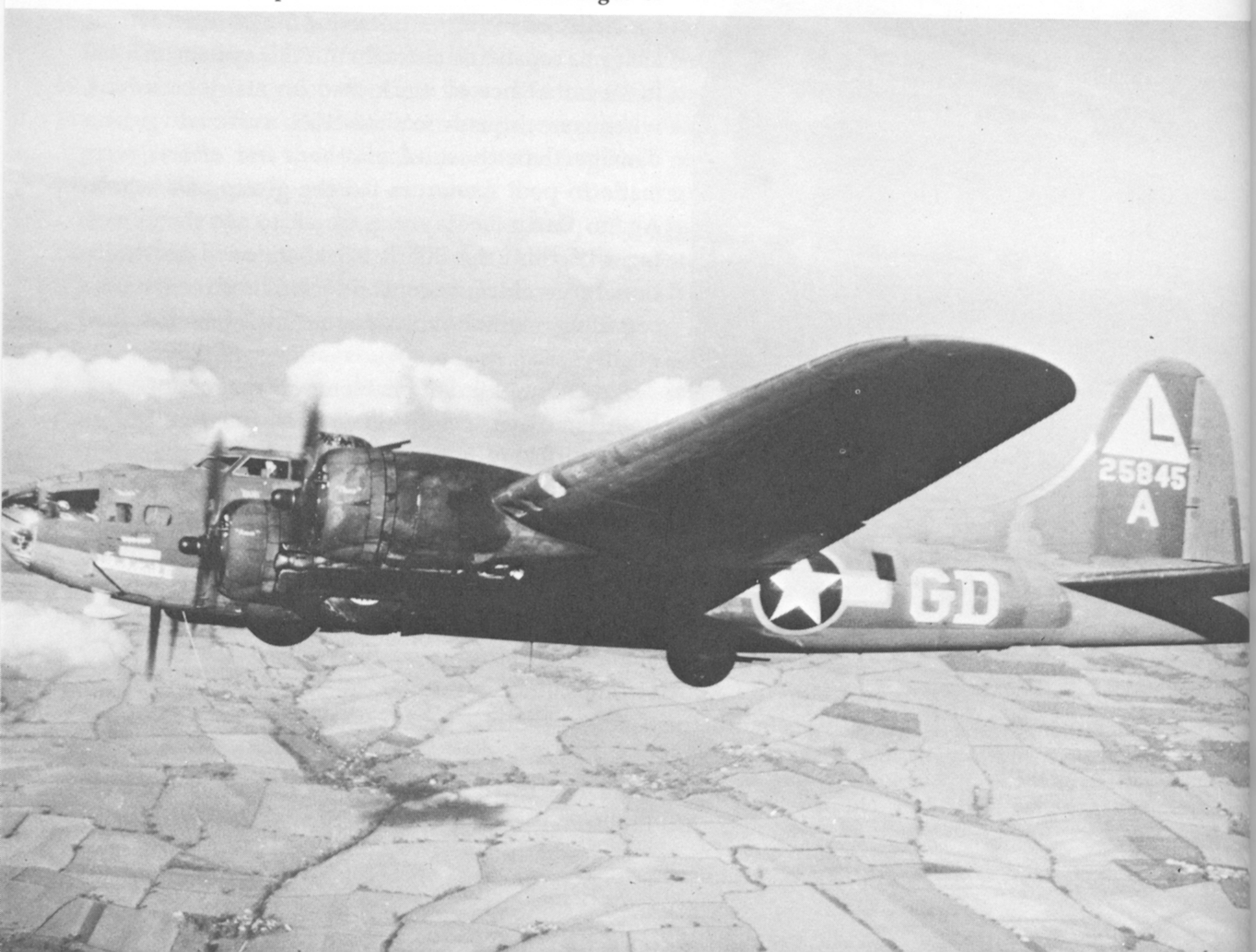
It had been hoped that the P-38F would be available in sufficient numbers for bomber escort work from the UK early in 1943, for with drop tanks Lightnings could take the heavies as far as Berlin.

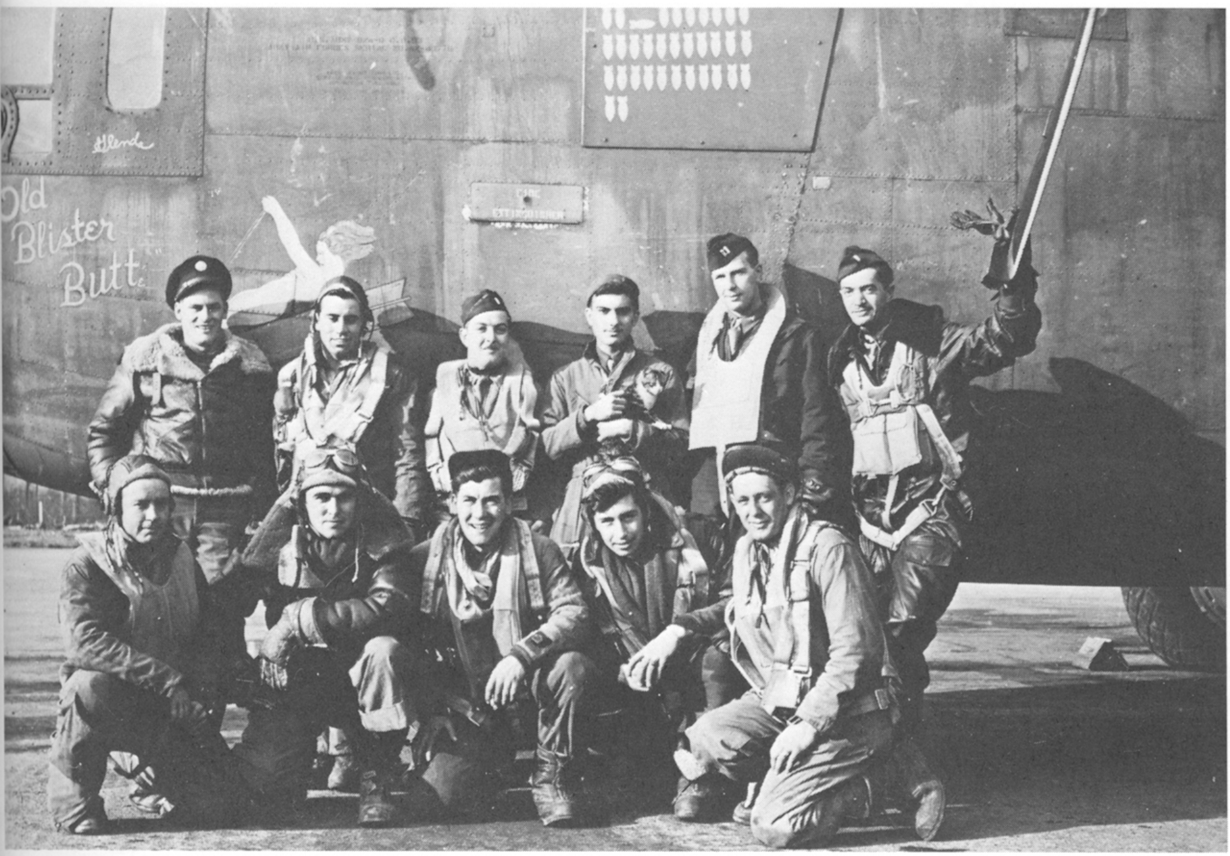
But the demands of the North African campaign meant that all aircraft were rapidly transferred and the attrition rate suffered by the P-38F in the MTO demanded all the replacement aircraft and crews that arrived in England. It would be late autumn before the first 8th AF units with P-38 H and J models, the 20th and 55th Groups, were ready for combat and the immediate requirements of 8th Bomber Command had to be met by sending P-47 groups to England. Experience had shown that few US aircraft were ready to face the combat conditions of Europe without a period of testing and modification first, and the Thunderbolt was no exception. One item that invariably had to be replaced was the US radio equipment, which was of the HF type, rather than VHF which was then in standard use in the UK.

By April, the 8th's bomber force had its offensive capability doubled with the arrival of four ne B-17 groups from the US. The same month sa the 92nd BG at Bassingbourn, Cambs., reform as operational bomber group. With the 93rd Group Liberators back from North Africa to bring t 2nd Wing up to strength, the 8th could count some 250 aircraft for operations – approximate half the total available. Hand in hand with th extra striking power went a further improveme in bombing accuracy – hits within 1,000 feet of th aiming point being achieved by 20 per cent of th bombs dropped.

With a workable number of aircraft at h disposal Eaker was able to hit different targe simultaneously, in an effort to divide the defendi forces. Additionally, diversions continued to flown, which although hampering the Germans some extent, were not favoured by all bomber me

14. 'Whaletail II', B-17F 42-5845, GD-A of the 534th BS, 381st BG from Ridgewell. After thirteen missions the aircraft shows some wear and tear – repair work is visible forward of the tailplane and code letters show signs of repainting. Crew nicknames are visible painted by the windows, and both port engines have names on th cowlings – 'Anne' inboard and 'Mame' outboard.





15. The crew of 'Old Blister Butt', B-24D 42-40776, pose by their ship at Hethel, home of the 389th BG – the *Sky Scorpions*. The horizontal bomb in the tally on the nose shows that for its third mission the Liberator drew Ploesti, where the approach was low, and the escape even lower.

The RAF and USAAF laid on low-level medium and fighter-bomber strikes on airfields and installations along the routes taken by the B-17s and B-24s to take more of the heat off the heavies. In May, the 8th's two B-24 groups were despatched once more to desert climes to add weight to the Ploesti attack. On the 4th, P-47s escorted the bombers for the first time: a mission to the Ford vehicle works at Antwerp.

Some re-organisation of the 8th BC took place at this time, with the result that each bomb Wing operated a single aircraft type: B-17s in the 1st and 4th BW, Liberators in the 2nd and the Command's only medium, the B-26 Marauder, in the 3rd, the number of which would in due course be taken by the all-B-17 3rd Air Division. Although the crews of the new groups arriving in the ETO had a higher standard of training than hitherto, there was no substitute for the tuition to be had 25,000 feet over Europe. Fortresses of the 4th Wing learned this hard lesson on 13 June, when 22 out of 26 aircraft lost on a mission to Kiel and Bremen were from groups fresh to the theatre. It fell to the B-17s to bear the brunt of the spring and summer strikes by the 8th, there being nine groups available in the 1st BW and seven in the 4th.

On 22 June, the mission to Huls marked the 8th's first large-scale penetration of the Rühr; the synthetic rubber plant was badly damaged by 422 tons of bombs dropped in an excellent pattern, 88 per cent falling inside the plant area. A second strike would have undoubtedly had a lasting effect, but at that time synthetic plants had a low target priority. The plant was back to full production by the end of the year.

Bad weather forced a considerable reduction of effort by the 8th's heavy bombers in late spring 1943; June was unusually cloudy and it was not until late July that conditions allowed a series of attacks on Germany to be made within a short

16. S/Sgt. James F. Jones, tail gunner in a doomed B-17F of the 388th BG, had a miraculous escape on 16 September 1943. After a mission over French airfields, the Fortress scraped a hilltop when searching for a landing ground; the impact threw Jones out at 200 feet, but he hit the ground with his half-deployed parachute wound round him, suffering only a sprained leg and bruises.

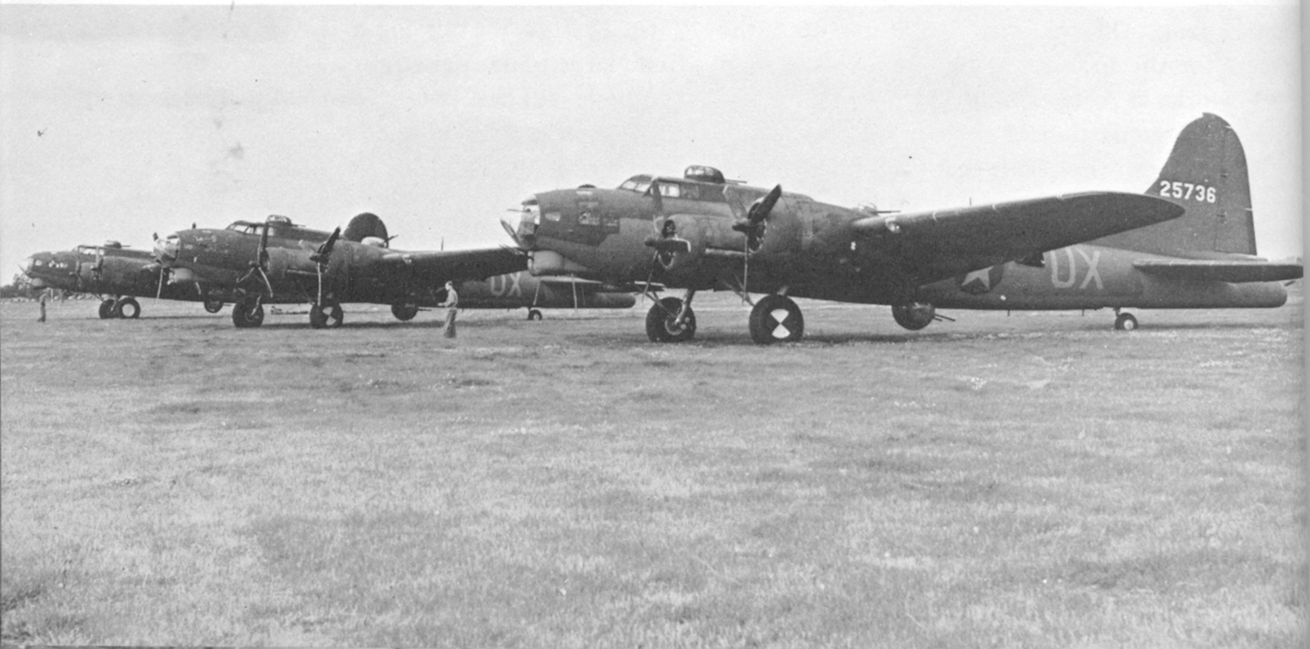
period of time. Kinder weather in the Mediterranean area allowed B-17s to make a first attack on Rome on the 19th, when aircraft from four groups based in Tunisia and at Pantelleria, backed by five groups of 8th and 9th AF Liberators, smashed the Lorenzo marshalling yards in a carefully planned and executed attack.

Six 8th AF missions were possible during t period July 24-30, which became known as 'Bli Week'. The 28th saw the deepest intrusion in Reich territory yet, when the 4th BW hit the Fock Wulf assembly plant at Oscherleben. Extra 300-g wing fuel cells, popularly known as 'Tokyo Tank enabled the bombers to reach their distant objectiv

Blitz Week was notable for the intense fight opposition encountered; most missions we marked by savage air battles and losses for th entire month of July were to amount to 128 B-17 Claims for German fighters shot down by gunne reached 545, and although the actual figure wa 40, the Luftwaffe could ill afford to lose an trained pilots at that time. Equally, the 8th A could not continue to lose over 100 Fortresses an experienced crews a month, as all replacemen were then being totally absorbed. A more confiden note was sounded by the P-47, which manage with the aid of 100-gal. drop tanks, to penetrat the Dutch/German border.

It was at this time also that an earlier attempt t overcome the escort problem, the YB-40 'Fighte Fortress' came to an end. Having a very heavil armed bomber barely distinguishable from a standard B-17 was a sound idea, but the weigh penalty of extra guns, ammunition and armou proved too much of a liability on operations At 63,500 lbs, the YB-40 lagged behind the mai

17. Three of the unsuccessful YB-40 'shotgun-guard' conversions of the 327th BS, 92nd BG at Bassingbourn, Cambs., home of the 91st BG on 15 May 1943. The nearest aircraft, 42-5736, later became WA-P of the 524th BS 379th BG at Kimbolton, Hunts., and flew at least thre combat missions.



18. Respray for a B-17 of the 91st BG at Bassingbourn, 25 September 1943. What remains of the overpainted letter seems to indicate that the aircraft originally served with the 306th BG, which had triangle H fin markings. In both cases the letter is some colour other than black, and the triangle is being painted light grey rather than white. The work crew are from the 364th Servicing Group.

bomber formation to such an extent that it was considered an unacceptable risk of a crew. After the 327th Sqn. of the 92nd BG had flown less than a dozen YB-40 missions – the first being to St Nazaire on 29 May – the experiment was abandoned. In due course, however, two of the modifications made to the twelve hybrid B-17Fs were introduced on the B-17G – the chin turret, and staggered waist windows, which gave the gunners more room to work.

If the sight of Thunderbolts accompanying them into the Reich was a great comfort to the bomber crews at the end of July 1943, there would be a few months to 'sweat out' before they could expect to see 'little friends' with them right through to distant German targets. Tests with drop tanks had been going on for some time, and types from both British and US sources had been tried. For the the Oscherleben mission, the 200-gal. 'babies' carried by the P-47s were non-pressurised and consequently of limited use above 23,000 feet. They also caused considerable drag. By late August, 75-gal. 'tear drop' tanks were available; and on 27 September, Thunderbolts accompanied the bombers right into their target for the first time on a mission to Emden – the fighter gap was gradually closing.

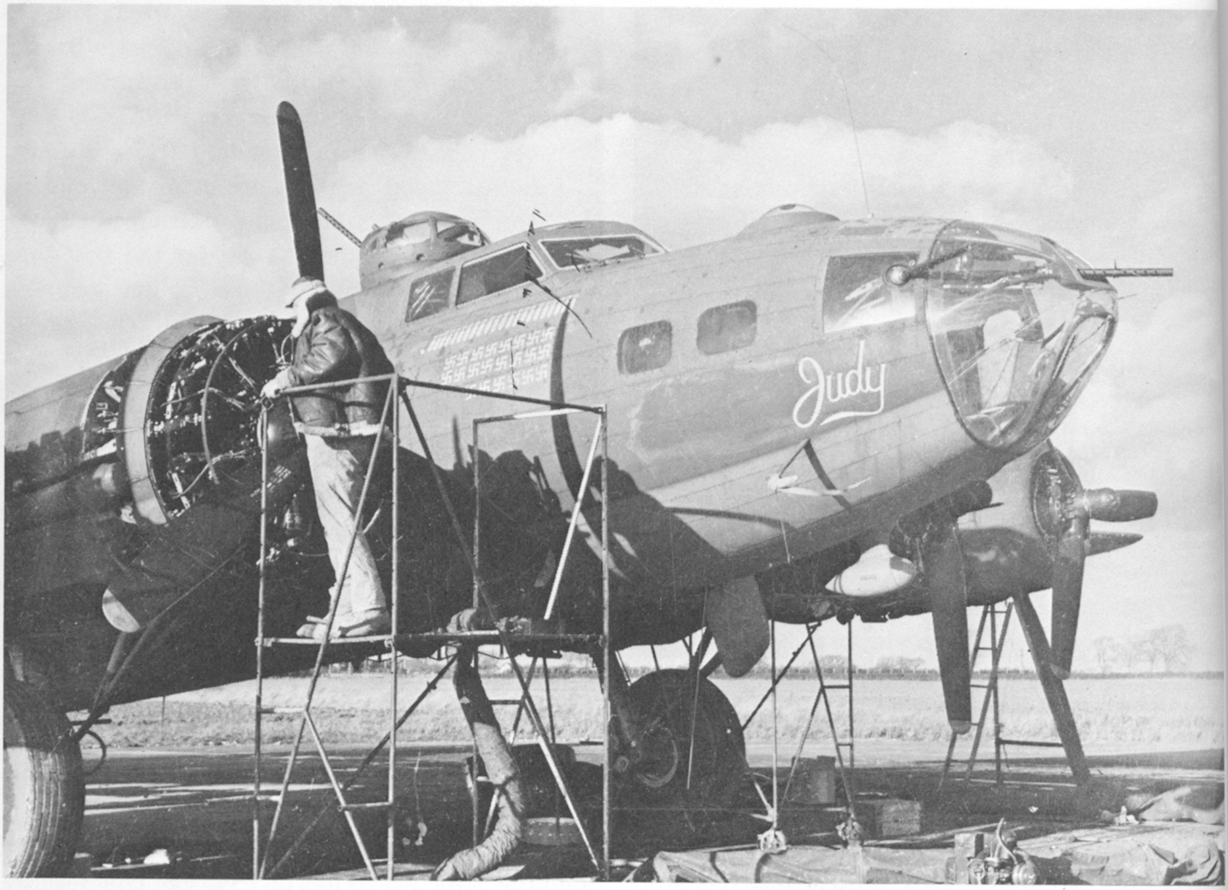
TIDAL WAVE

Although British planning had envisaged an attack on the Rumanian oil fields at Ploesti by RAF aircraft using bases in Greece as early as 1941, subsequent events meant that by 1942 such an operation was only possible if flown from the Middle East. It was from there that the Halverson B-24s had mounted the first strike at Ploesti, the aircraft having staged from the US en route to China to carry out their original mission, a morale-boosting blow at a target in Japan.

With oil targets placed fourth on the list of USAAF bombing priorities in March 1943 and endorsed by the *Pointblank* directive approved on 14 May, pressure mounted for a second Ploesti mission. One conclusion of the results of the Halpro attack was that too few aircraft had been used; under the *Tidal Wave* plan, it was determined to muster the maximum number of Liberators for an operation which would, it was hoped, 'shorten the war by six months.'

On 1 July 1943 a British report had estimated that some 30 per cent of Axis oil supplies were drawn from the Ploesti fields; what the report was unable to mention was the defences that had been moved into the area since the Halpro operation – there were more than 40 batteries comprising 237 AA guns and hundreds of machine-guns in and around the Liberators' potential target, to say nothing of watchful Bf 109s nearby.

By mid-March the two 9th AF groups that would go to Ploesti, the 98th *Pyramiders* and 376th *Liberandos*, were established in the Benghazi area under the command of Col. E. Ent. These units would be joined by three 8th AF groups, the



19. If the nose art were to be believed, 'Judy' took a pretty impressive toll of the *Jagdflieger* – 22 fighters in 22 missions . . . From the repainted area on the nose, some of the missions were flown under another name. 'Judy' is seen during engine overhaul on 24 November 1943 at Kimbolton, home of the 379th BG.

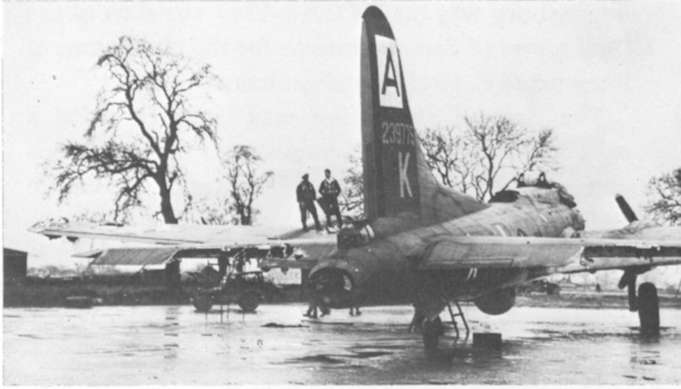
44th *Eight Balls*, the 93rd *Circus* and the 389th *Sky Scorpions*. Apart from their olive drab paintwork, the 8th AF B-24 groups in the desert could be distinguished from their MTO sisters by their formation flying, which was closer than had been found necessary on desert operations. A number of German air-to-air bombing attacks on the heavies had shown that a looser formation was a good deal safer in the MTO.

The decision to send the force of 178 Liberators to one of the world's most heavily defended targets at a low level was taken to achieve maximum surprise, it being calculated that the defenders would be unable to change the high-level fuse settings on their AA shells before the Liberators appeared on top of them. The machines would be below radar surveillance, fighters would be denied air space to attack the bombers from below, and targets would be readily identified. (In the event, the German gunners were able to bring their heavy flak to bear with remarkable speed.) There were doubters among the *Tidal Wave* planners, but as on other occasions when a special mission was laid on, the chances of success appeared to negate the unknown factors. On 1 August the Liberators left their dusty runways, each laden with eight 500 lb bombs and incendiaries and carrying extra nose guns to deal with ground fire.

But for untimely confusion at the second of the three initial points, the well-planned strike might have achieved greater success. A premature turn at the second IP by the *Circus* and *Liberandos* sent both winging south towards Bucharest before the mistake was realised. In heading back to hit Ploesti from the wrong direction, these two groups crossed the track of those that had made their approach as briefed, leading to a general melée above the refineries. This early error, murderous ground fire and fighter attacks resulted in the loss of nearly a third of the force – 57 aircraft. Only two of the refineries were bombed as planned, but these were completely wrecked, and a 1944 assessment of all attacks made on the plant by the USAAF and RAF determined that the *Tidal Wave* strike had caused more damage per ton of bombs against tons of oil destroyed than any other.

Whatever the 1 August Ploesti mission achieved in terms of strategic gains for the Allies, it was one of the most spectacular military operations of the war. There were many acts of heroism that day, and five Congressional Medals of Honor went to participating crewmen, four to members of the 8th AF groups. Only three other such awards were given to B-24 men during the war.

Before returning to England, the trio of 8th AF groups flew four more missions from the Mediterranean theatre, the first of which was a strike on the Messerschmitt plant at Wiener Neustadt in Austria. The deep penetration lasted some twelve hours and was to have coincided with the 8th's attack on Schweinfurt and Regensburg, originally scheduled for 7 August. With this operation postponed until the 17th in view of prevailing weather conditions, the Liberators decided to go on the 13th. Meagre defences resulted in a good strike, the bombs going down through thin overcast. Messerschmitt Bf 109 production was reduced by heavy damage to four machine shops.

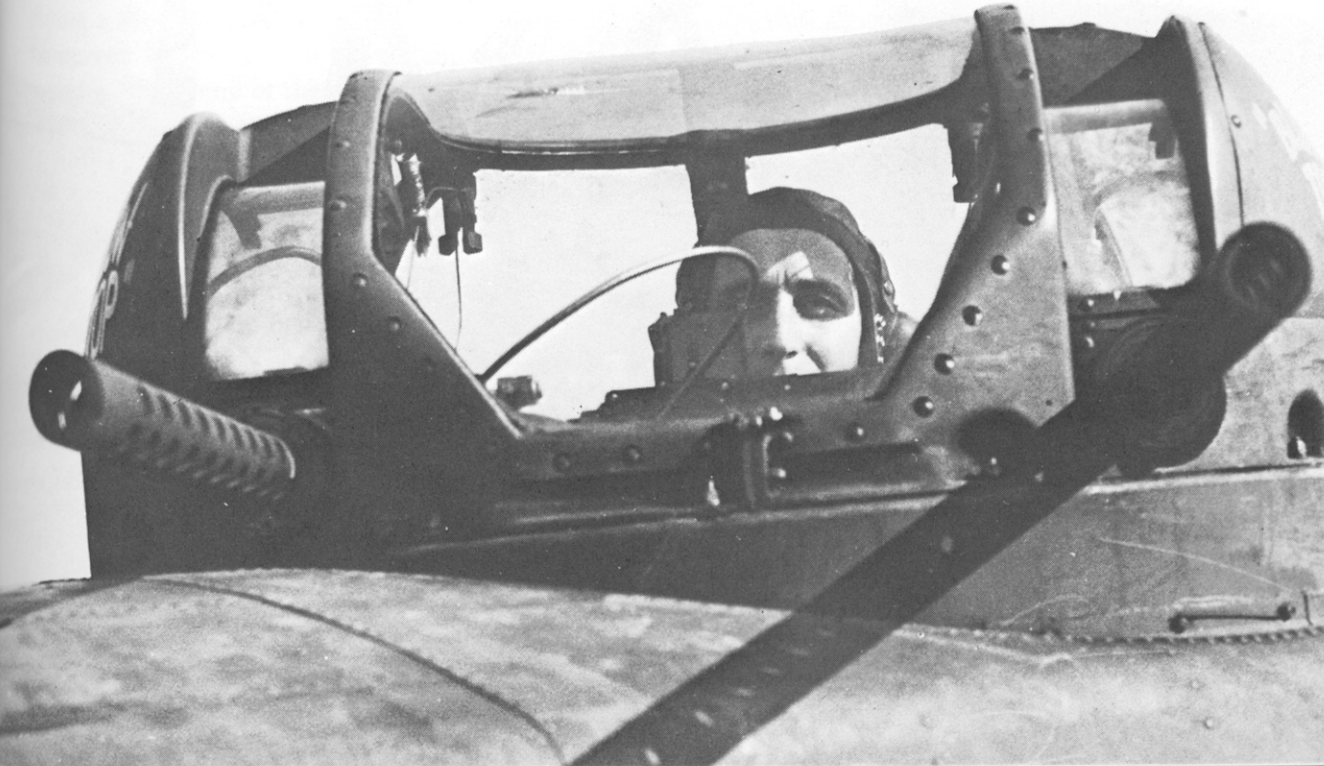


20. The Fortress earned a superb reputation for bringing her crews home after suffering massive battle damage. Five crewmen and a photographer abandoned 'Frenisi', B-17G 42-39775, TS-K of the 333rd BS, 94th BG on a mission over Brunswick on 11 January 1944. The ship was momentarily apparently out of control after taking severe hits in the tail, wings, and one engine and losing oxygen and intercom systems; but 1st Lt. William Cely regained control, and brought 'Frenisi' home to Bury St. Edmunds.

SCHWEINFURT & REGENSBURG

If Ploesti was the *tour de force* of the Liberators, the double strike on the ball-bearing complex at Schweinfurt and the Messerschmitt facility at

21. The twin 'fifties of a B-17F top turret, manned by T/Sgt. Harry Goldstein; heavy framing of the early top turrets was reduced on the B-17G.



Regensburg was that of the B-17s – the start of the final round of demonstrations for the champions of unescorted daylight bombardment.

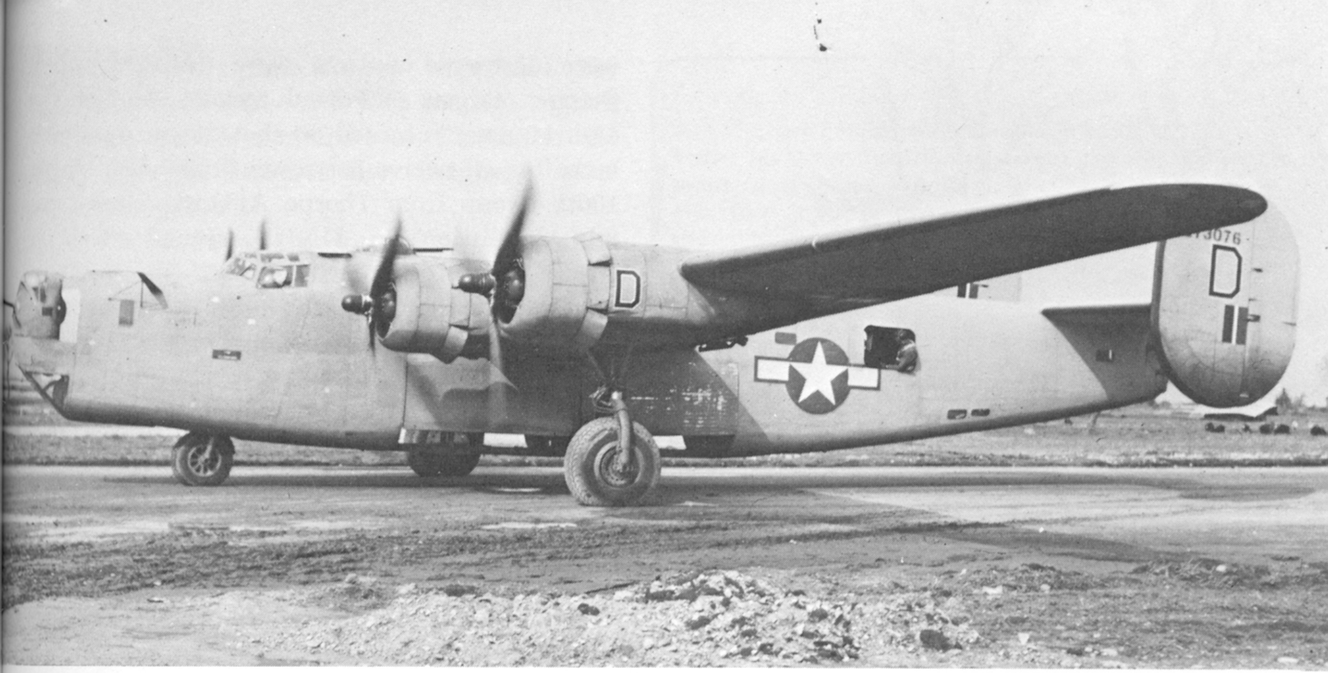
The date of the strike was significant for a number of reasons – 17 August was the first anniversary of the start of the 8th AF bomber offensive and also the first time that a shuttle mission to North Africa was tried. It was also to record the grim statistics of a 19 per cent loss for the attackers – 60 B-17s from the 376 despatched.

Elaborate pre-mission planning estimated that P-47s would engage the Luftwaffe during the 3rd Division's flight to Regensburg, refuel, and shepherd the 1st Division on its way to Schweinfurt. Unfortunately, fog held the latter force on the ground for over three hours after scheduled take-off time. The Germans picked up the Regensburg force early, but held their fighters until the Thunderbolts turned for home. What followed was carnage on a scale unprecedented in the history of aerial warfare. A maximum effort by the Luftwaffe brought a variety of aircraft types up to hit the bombers with machine-gun and cannon fire and air-to-air rockets. The Regensburg force had lost fourteen bombers by the time the target was sighted, but 132 B-17s dropped their loads squarely on the ball-bearing plant. Temporarily surprised by the bombers continuing on south after the attack rather than making the customary turn, the Germans recovered quickly and ten more Fortresses were downed before the remnants of the force reached North Africa.

Hurling themselves at the 1st Division in the late afternoon, the refreshed and replenished defenders did not even wait for the P-47s to leave their charges. Another 36 B-17s were shot down, a total for the day of 600 men missing and 60 aircraft lost. More than 100 bombers were damaged, some so badly that they would never fly again. Bombing at both targets had been good, however, if considerably less heavy than had been intended, and at Regensburg a small but important bonus was the destruction of a number of fuselage jigs for the Me 262 jet fighter. Even so, Germany was struck off Eaker's target list for some weeks.

The last days of August and early September saw the 8th AF heavies attempting to hit back at their antagonists by a series of attacks on Luftwaffe

22. A B-17 is given a coat of anti-freeze with makeshift hand-pumps at Bovingdon, Herts. on 10 February 1943, prior to taking off on a weather reconnaissance mission.



23. This Liberator, B-24J 42-73076, D, of the 98th BG was photographed at Guardo, Italy, on 13 February 1944. By that time she would have been part of the 47th Wing, 15th Air Force, but the later identity markings have not yet been applied. She is finished in the familiar 'desert pink' top surface scheme, and RAF fin flash theatre markings. (H. Levy.)

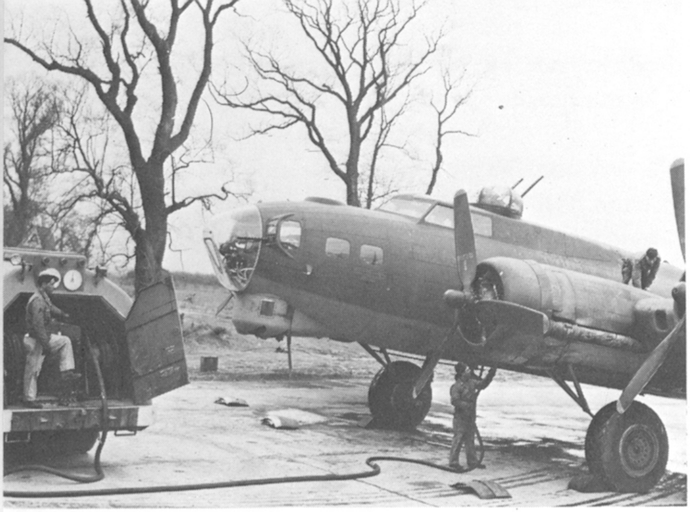
fighter bases in France and the Low Countries, under the codename Operation *Starkey*. Results were disappointing, as few aircraft were seen to be destroyed on the ground and the Germans did not rise to the bait in any numbers. Another blow at the enemy's ball-bearing supply was scheduled for 6 September, when the B-17s were sent to factories in the Stuttgart area. With Liberators flying a diversion, the Forts found their bombing hampered by cloud and more than 100 fighters waiting. At the end of the day, there were 45 more empty hardstands at 8th AF bases.

A steady flow of replacements enabled the 8th to despatch 399 aircraft to Bremen-Vagesack on 8 October – the notion was still held by some that the 17 August debacle had been partly due to dividing the attacking force, thus reducing the number of defensive guns. While it was true that 399 B-17s had over 4,000 heavy machine guns, only about 15 per cent could be brought to bear where they were most needed – straight ahead. Equally, attacks from directly above the bombers gave the German pilots plenty of chances, as indicated by Lt. Franz Stigler of fighter group JG 27:

'I learned the hard way never to attack a heavy bomber from the rear. I decided to go in from above whenever possible. With high speed built up in a dive, my aircraft made a very fleeting target and the more vertical my descent, the more difficult it was for the top-turret gunner to get an angle on me. Most of the time I was through the formation before he even saw me and would be climbing back up for another pass. On this type of approach, the firing time allotted to me was extremely limited. I could only get in one short burst.

'When diving down from above, a few hits from your 20-mm cannon was all that was necessary. Your target was usually made up of the pilots' cabin, the engines and the wing oil and fuel tanks. If you came in a trifle low (from the rear) you received ball-turret fire. If too high, the top-turret gunner could track you very well and you also received fire from the radio-hatch gun. On the breakaway, the waist gunners could also get in a few parting shots. In many instances, you were going too fast – his top gunner never saw you, and if he did, it was difficult for him to fire straight up.

'With this type of attack, the closure rate was frightening. The target appeared almost stationary and loomed at you like a concrete runway. Your firing time was perhaps 1/5th that of the tail



24. Part of the 100-octane fuel load being pumped into the inboard tanks of 42-21313, a B-17G of the 91st BG, at Bassingbourn on 10 February 1944. The B-17G could take 2,810 US gallons in its built-in tanks, and 3,630 maximum with bomb-bay tanks. The ship illustrated here is a Vega-built Fortress with short perspex nose cone.

approach and you really had to break off quickly. Nevertheless, it had one great compensation – when you were firing at your bomber, more often than not he was not firing at you.

'Before the coming of the chin-turreted bombers, a head-on pass was a good choice if you broke down low, but they could see you coming from a long way out and you could be hit by other ships in the formation.'

The vulnerability of the unescorted heavies was again shown by the Bremen mission – 30 B-17s were destroyed and 26 were damaged. On 9 October, targets in Poland cost 28; and on the 19th Munster recorded 30 shot down, the figure including *all* twelve Fortresses despatched by the 100th Group from Thorpe Abbotts. Then came 8th AF Mission No. 115, the second attack on Schweinfurt. Again the 1st and 3rd Divisions provided the 191 B-17s. As the P-47s turned back for England over Aachen, the first of another 60 B-17s that would be lost that day came under attack. Eyewitness description graphically tells the story of the mission:

'The whole damn Luftwaffe is out today! Look at those bastards come in.

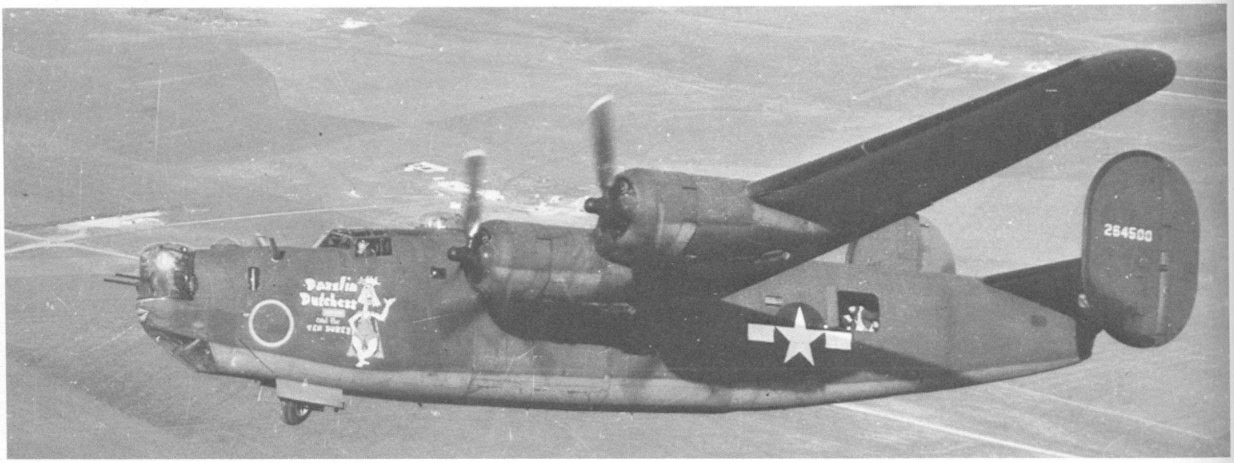
'Suddenly out in front appear flashes resembling continuous photography multiplied a hundred times – I have seen it before. Just as quickly I make out the approaching silhouettes of the fighters – the flashes are coming from their 20-mm cannon.

'Momentarily I am aware of our own guns. The bursts have become short, but the sound is almost continuous as it bounces from the various gun positions.

'There is little use in reporting fighters that are everywhere. There is no way of counting them.

'A few hundred feet in front of us a bomber has been hit by a rocket. I catch sight of it as the right wing starts to fold upward. The fuselage opens like an eggshell and a man dressed in a flying suit spins clear out in front. I see the pilots still at the

25. The grandly-named 'Dazzlin' Dutchess and the Ten Dukes' – note Cupid lips painted below front of nose turret – landed safely after the nosewheel failed to lock down. The pilot, 1st Lt. Roy H. Schott of Texas, ordered his crew aft, where they can be seen through the waist windows, and proceeded to land on the mainwheels and the rear fuselage, which was thus weighted down. The B-24H is serial 42-64500; it was photographed on 15 March 1944. Lack of tail markings indicates a replacement for one of the B-24 groups of The 15th Air Force.



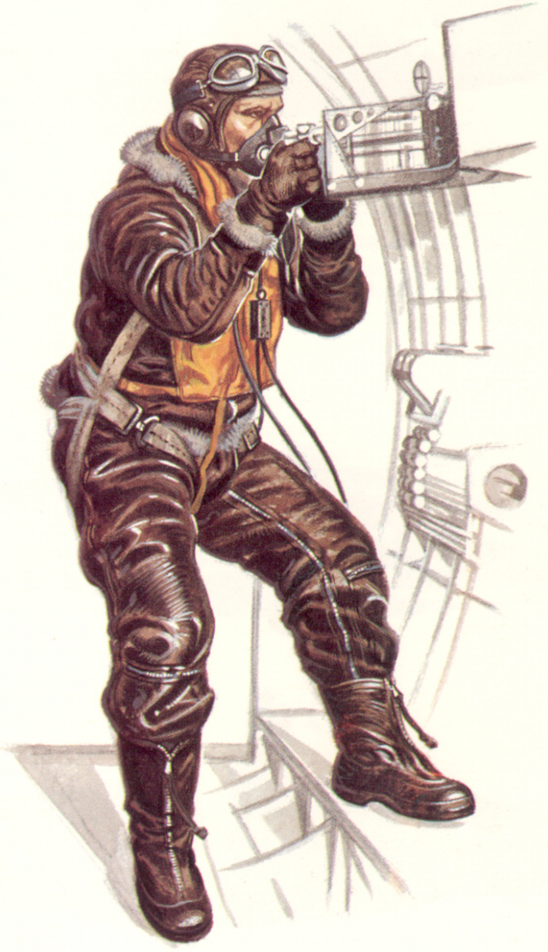
controls, then the plane is swept with flame. The right wing breaks free and with the two engines still spinning, drifts to the rear, flaming at the ragged end. The shattered mess disappears under our left wing.'

The survivors of the formations made their bombs count, three of the five bearing plants being hit hard. The lead wing placed all bombs within 1,000 feet of the Main Point of Impact (MPI) and 15 aircraft of the 8th's youngest group, the 390th from Framlingham, put 51 per cent within 1,000 feet of the MPI. Some 67 per cent of Schweinfurt's production was lost after the strike and, in Albert Speer's view, if the 8th had been able to continue attacks on ball-bearing centres, the Germans 'would have been at [their] last gasp.' Among the reasons why ball-bearing plants were not repeatedly hit, apart from the prohibitive losses suffered during such attacks in 1943, was that some Allied leaders, Sir Arthur Harris included, thought that the enemy would quickly decentralise such vital industry. Only after the war was it realised that the ability of even the Nazi regime to do this had been greatly over-estimated. In those cases where dispersal was achieved, the resultant disruption often caused greater delays in production and delivery than did the actual bombing.

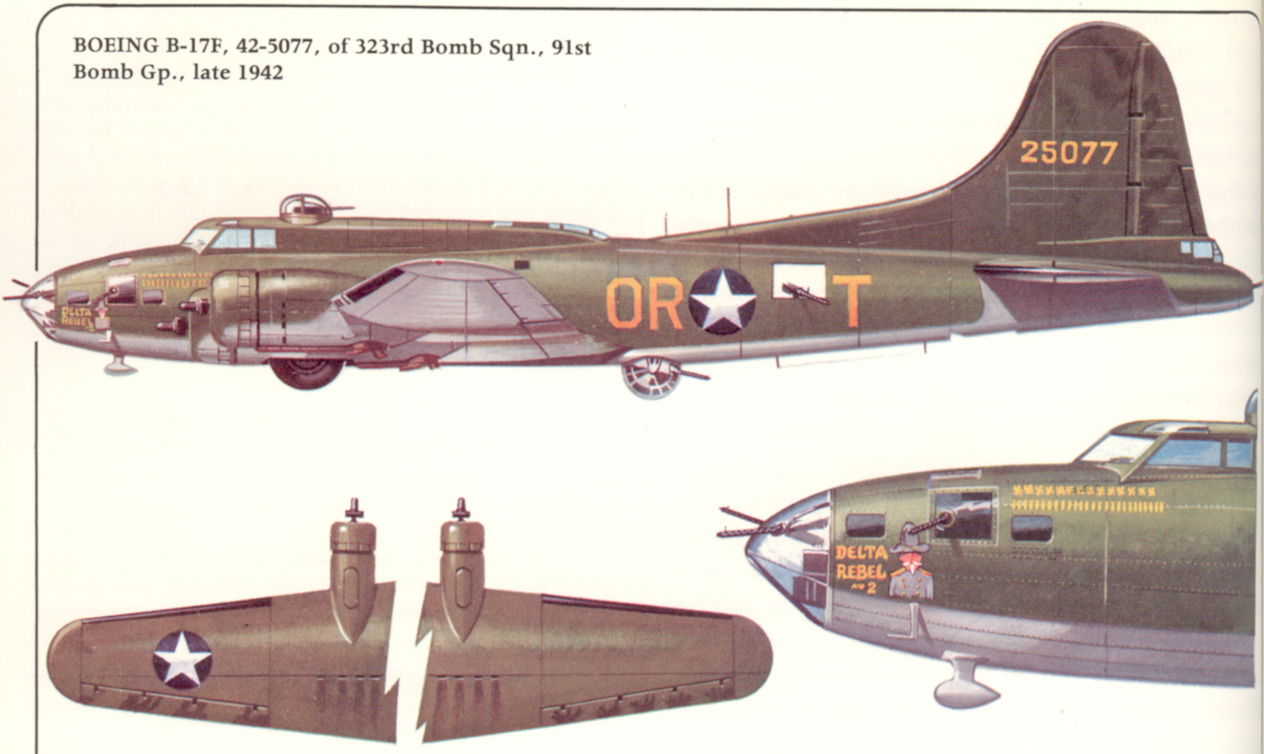
ITALIAN BASES

Although the North African bases used by the USAAF bomber force in 1942–43 proved their worth during army support operations in the MTO and showed the advantages of a two-pronged assault on Germany, there was a need for airfields closer to the potential targets. The capture of thirteen Italian airfields around Foggia on 27 September 1943 made a second strategic bomber force much more feasible. Italy as a base also seemed to offer a number of other advantages: weather conditions were reckoned to be better than those which the 8th often had to cope with in England; and from that country, B-17s and B-24s could easily reach targets in southern Germany and eastern Europe. The Foggia complex was quickly prepared for US heavies and the first mission was flown from there on 1 October—a strike on Wiener Neustadt.

USAAF heavy bomber waist-gunner in flying clothing. Under his fleece-lined leather jacket and trousers he wears 'long johns' and an electrically heated fabric suit. Over it he wears an uninflated life-jacket with straps around the waist and between the legs. Over this is worn the parachute harness – obscured here is the horizontal strap across the chest; the parachute pack was stowed separately and clipped to the harness D-rings in emergencies. An oxygen mask, with breather bag, is clipped over the face, incorporating intercom microphone; leads from headphones unite in box on chest.



BOEING B-17F, 42-5077, of 323rd Bomb Sqn., 91st Bomb Gp., late 1942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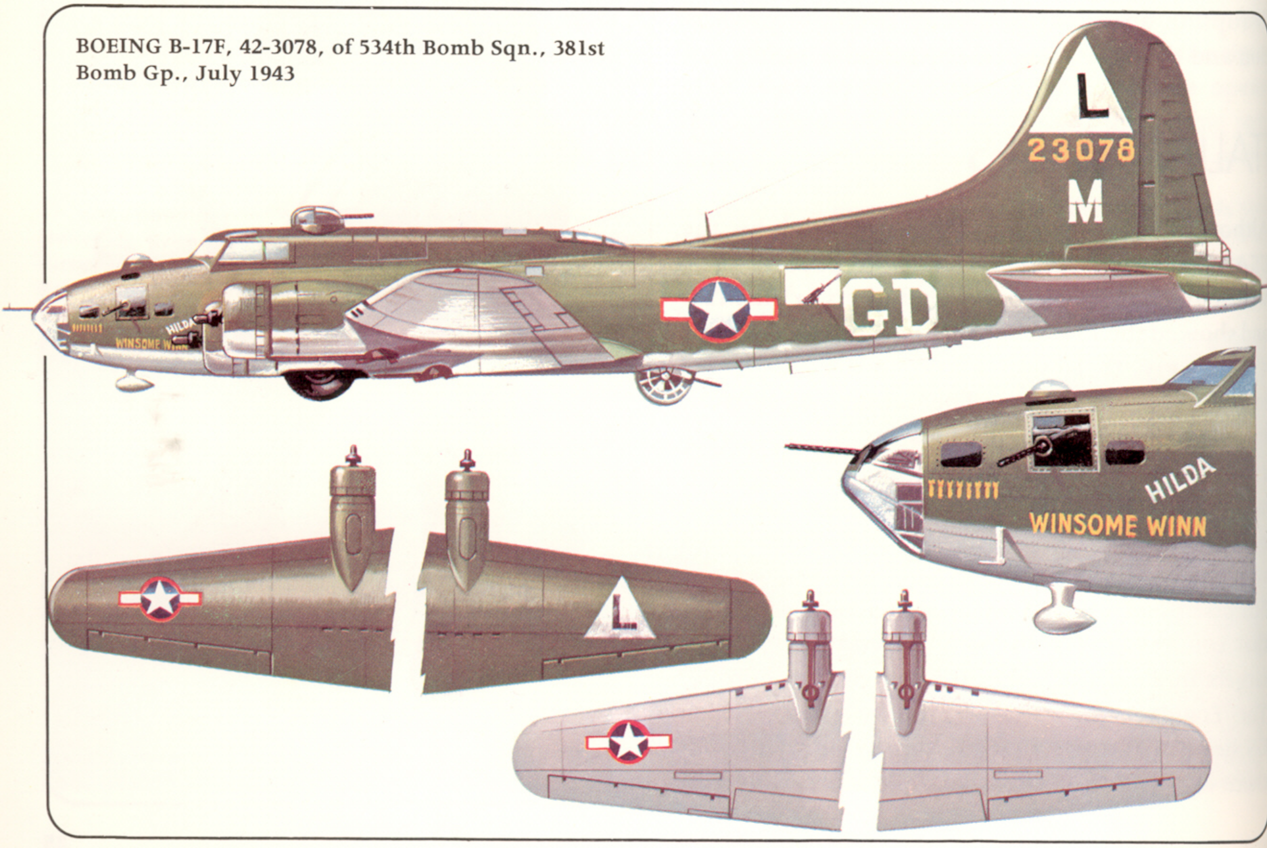
OR T
DELTA REBEL
DELTA REBEL No 2

BOEING B-17F, 42-3078, of 534th Bomb Sqn., 381st Bomb Gp., July 1943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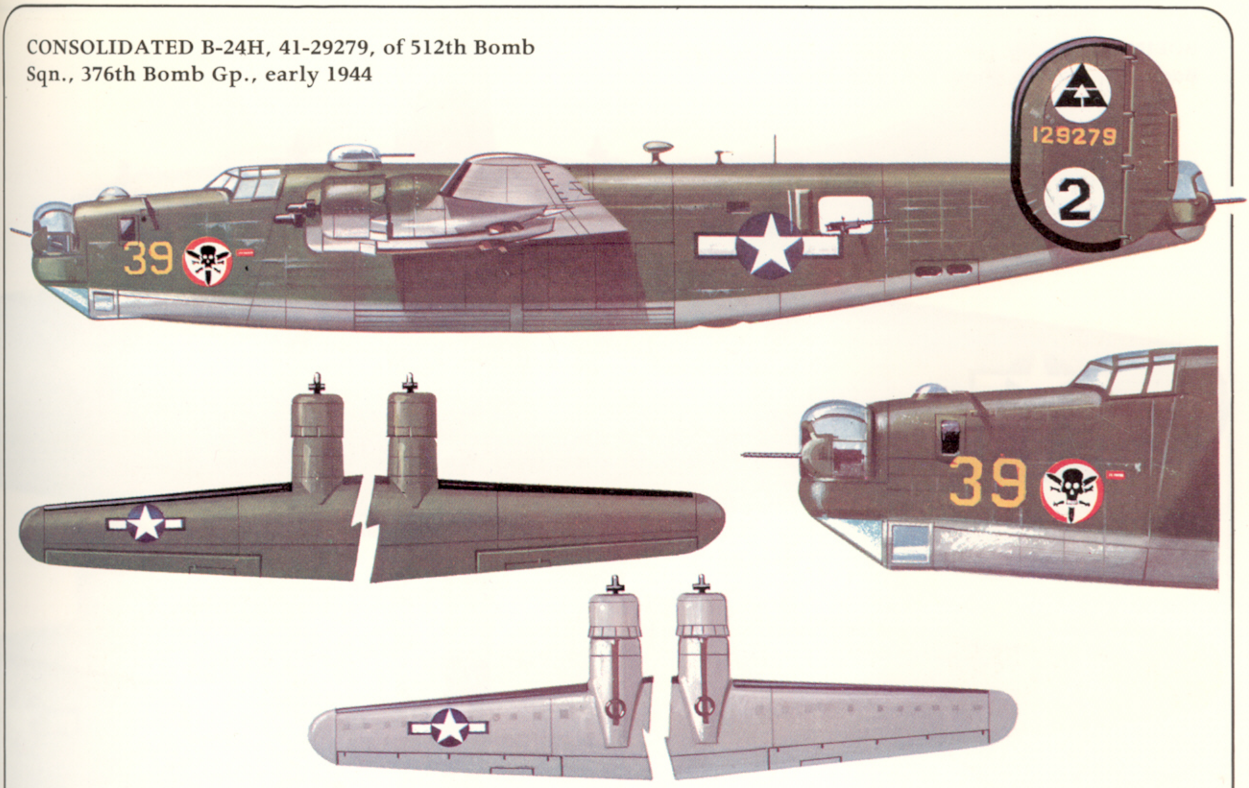
CONSOLIDATED B-24H, 41-29279, of 512th Bomb Sqn., 376th Bomb Gp., early 1944

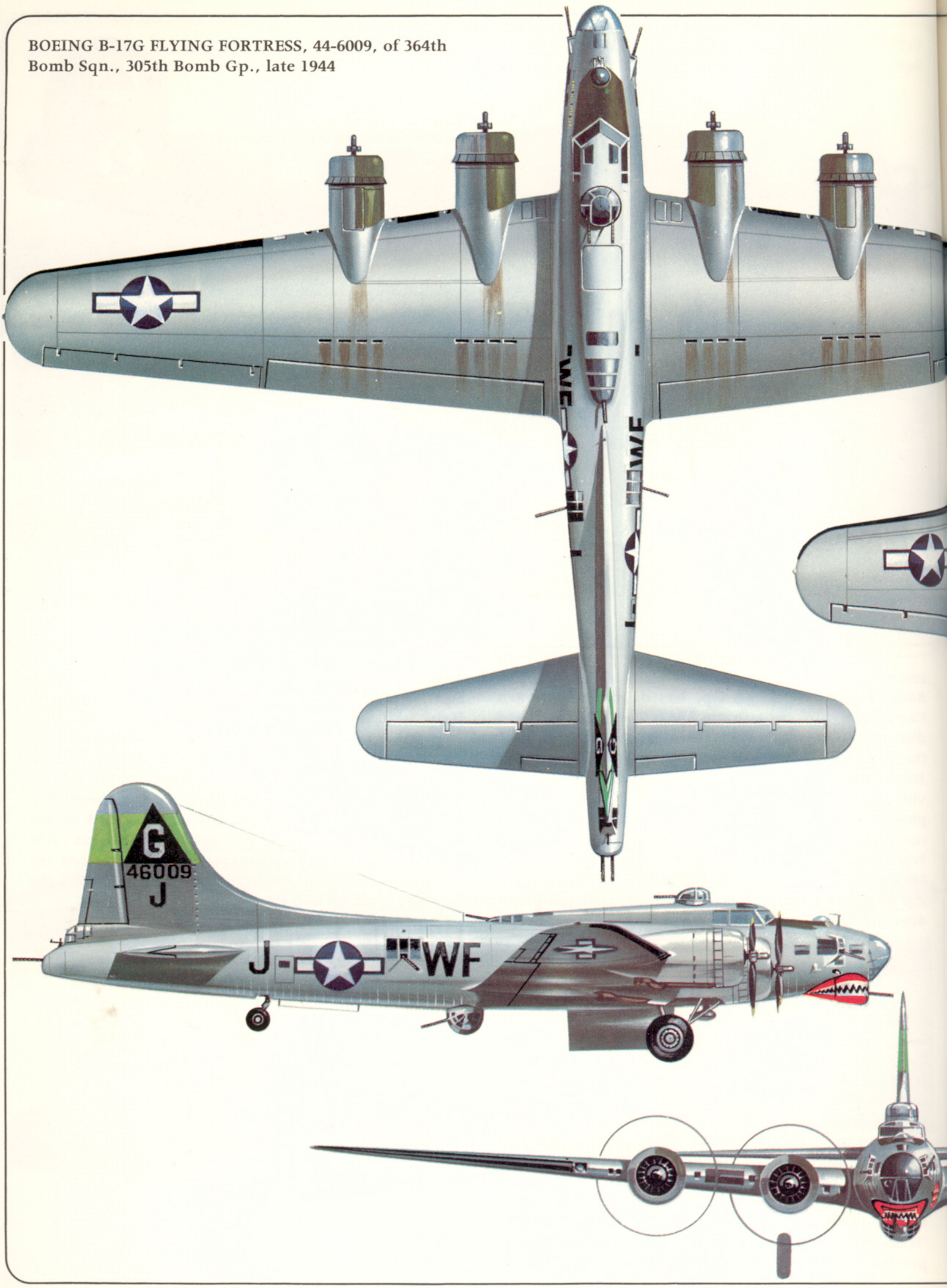


OPPOSITE, TOP: Boeing B-17F, 42-5077 OR-T of 323rd Bomb Sqn., 91st Bomb Gp. based at Bassingbourn, Cambridgeshire, in autumn 1942. The plain star-and-disc national insignia were introduced in August 1942; the geometric group tail symbols did not appear until June 1943. 'OR' are the squadron codes, 'T' the individual aircraft code. 'Delta Rebel No.2' was one of the pioneer Fortresses which received wide publicity from correspondents during the early months of 8th Air Force operations; she soldiered on until the first Schweinfurt mission on 17 August 1943, from which she failed to return. Note splashes of 'medium green' over the 'olive drab' finish on tail and wings.

OPPOSITE, BOTTOM: Boeing B-17F, 42-3078 GD-M of 534th Bomb Sqn., 381st Bomb Gp., based at Ridgewell, Essex in July 1943. The white tail triangle identifies 1st Wing, the 'L', the 381st Gp.; 'GD' is the squadron code and 'M' the individual aircraft code. June 1943 saw the introduction of the white bars and a red surround to the national insignia; complaints about the use of red anywhere in the insignia were immediately lodged by forces in the Pacific theatre, and the red was replaced by insignia blue from August. 'Hilda' is believed to have been added to the aircraft, originally 'Winsome Winn', by a second crew. Removing the previous crews' artwork was considered unlucky.

ABOVE: Consolidated B-24H, 41-29279 of 512th Bomb Sqn., 376th Bomb Gp., operating from San Pancrazio, Italy, with the 47th Wing, 15th Air Force in 1943–44. The tail markings were used from December 1943, the triangle indicating the wing and the '2', the second group within the wing. '39' was the aircraft-in-group number, and the squadron badge appeared on the port side only. This aircraft crash-landed on the Adriatic coast after being damaged on a mission early in 1944; an Air Service Command team repaired the damage and built an emergency strip, from which the machine took off and flew home.

BOEING B-17G FLYING FORTRESS, 44-6009, of 364th Bomb Sqn., 305th Bomb Gp., late 1944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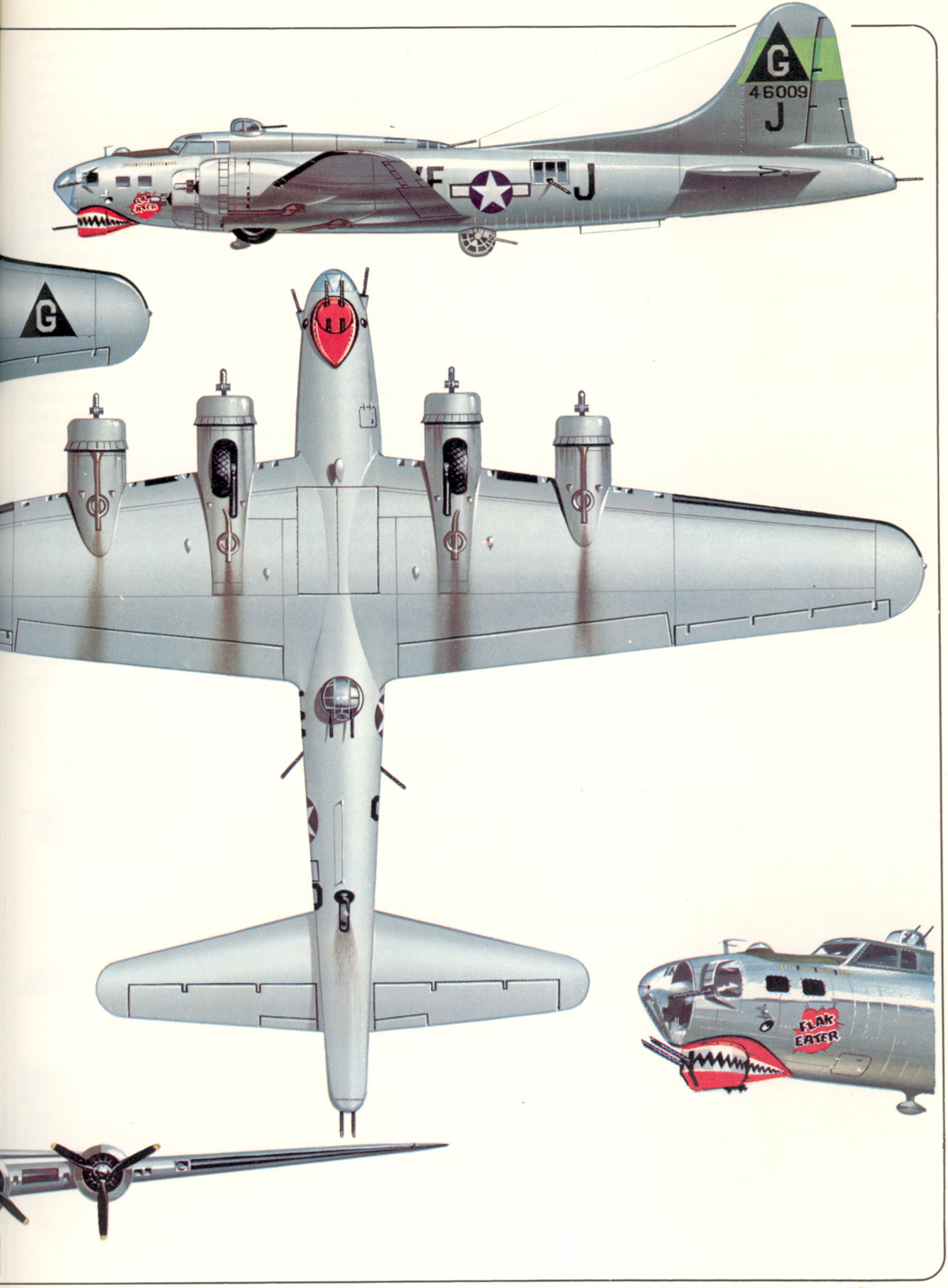

G
46009
J
F
J
G
FLAK EATER

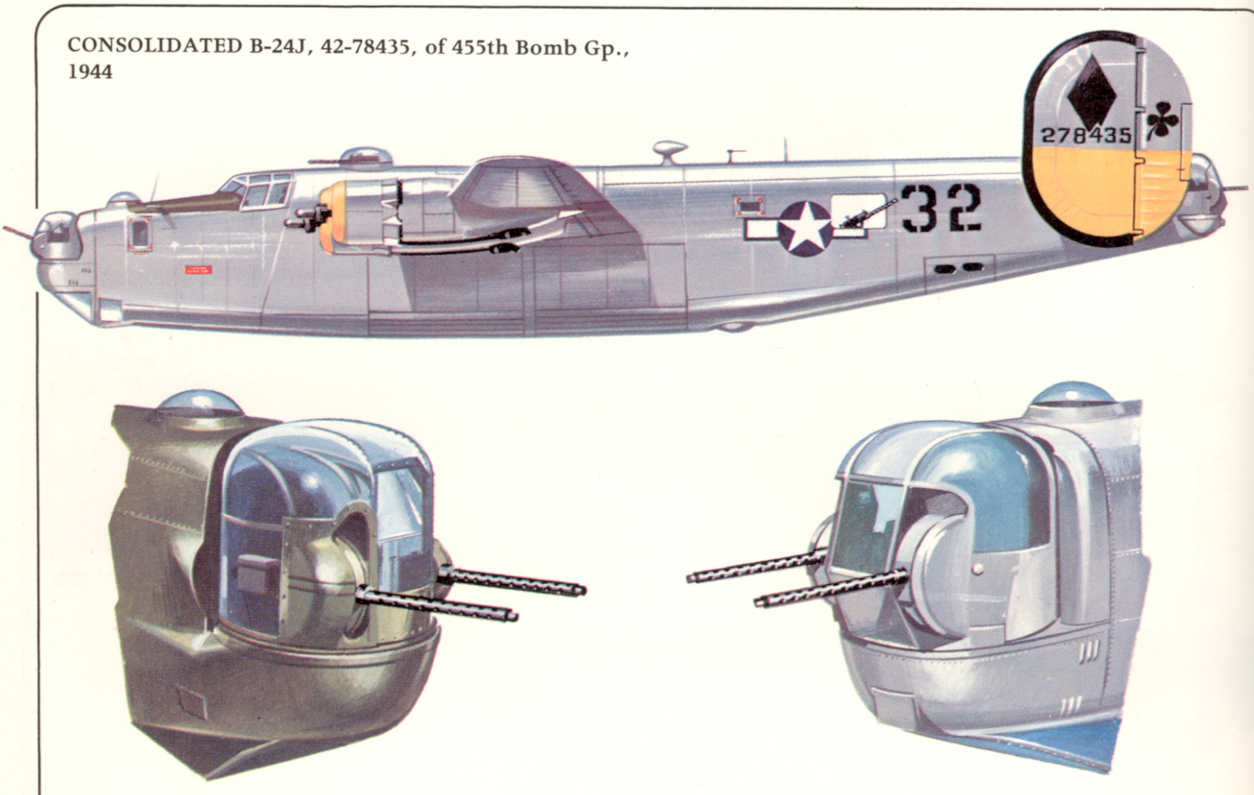
PAGES 28–29: Boeing B-17G, 44-6009 WF-J of 364th Bomb Sqn., 305th Bomb Gp., based at Chelveston, Northamptonshire, in autumn 1944. The group's 'G' code appears on the triangle now identifying 1st Air Division, and the aircraft bears the green tail stripe assigned to the group as an additional identification from August 1944. Note that the fifth, tenth and fifteenth of the eighteen bombs carried as mission score-board by 'Flak-Eater' are black; the 305th pioneered 8th Air Force night missions and the black bombs may indicate night raids.

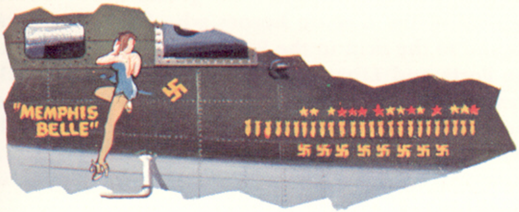
BELOW: Consolidated B-24J, 42-78435 of 455th Bomb Gp. 304th Wing, 15th Air Force, based at San Giovanni, Italy, in 1944. Colour markings were introduced by the Wing in April, but were somewhat capriciously applied, and there is little indication of squadron within the group. (Officially the port upper tailplane surface was to be yellow, the starboard surface natural metal with a central black diamond.) The '32' is an aircraft-in-group identification; the shamrock may have been a squadron emblem, as was the painting of cowling rings yellow. Patch views illustrate (left) the Emerson, and (right) the Consolidated nose turrets fitted to Liberators.

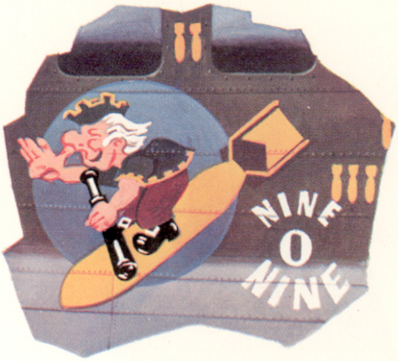
OPPOSITE, TOP: Selection of nose art. Top left is the port nose marking of B-17F, 41-24485 DF-A of 324th Bomb Sqn., 91st Bomb Gp. 'Memphis Belle', whose girl wore a red swimsuit on the starboard side, was the first 8th Air Force bomber to complete 25 missions over Europe; she returned to the States and took part in publicity drives, and survives today – although her paintwork bears little resemblance to the original scheme, copied here from a rare wartime colour film. Top right is the port nose insignia of 'Nine-O-Nine'. B-17G 42-31909 OR-R of 323rd Bomb Sqn., 91st Bomb Gp. This remarkable ship completed 140 missions without a single injury or death among her crews – an 8th A.F. record. Bottom left is 'Meat Hound', a short-lived B-17F, 42-29524 RD-D of 423rd Bomb Sqn., 309th Bomb Gp., which flew briefly from Thurleigh, Bedfordshire. Bottom right is the squadron badge of 513th Bomb Sqn., 376th Bomb Gp. – the 'Liberandos' of Ploesti fame – as born by B-24D 41-11779. '41' is the aircraft-in-group number. The badge was officially approved in January 1944, but many Liberator units bore their squadron badges on the aircraft throughout their service, many more than in Fortress units. Late 1943 paint scheme is illustrated, applicable to the unit's early operations from San Pancrazio, Italy.

OPPOSITE, BOTTOM: GMC 6 × 6 $2\frac{1}{2}$-ton tanker truck in USAAF colour scheme and markings, as used by 8th A.F. in Britain. The first two digits of the individual number, '80', indicate the class – tankers, sprinklers and refuellers of all sizes.

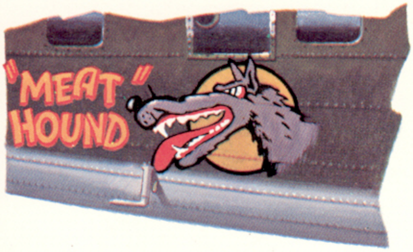
CONSOLIDATED B-24J, 42-78435, of 455th Bomb Gp., 1944

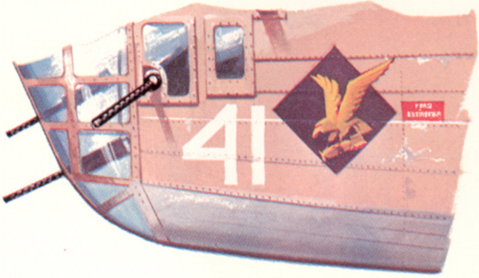


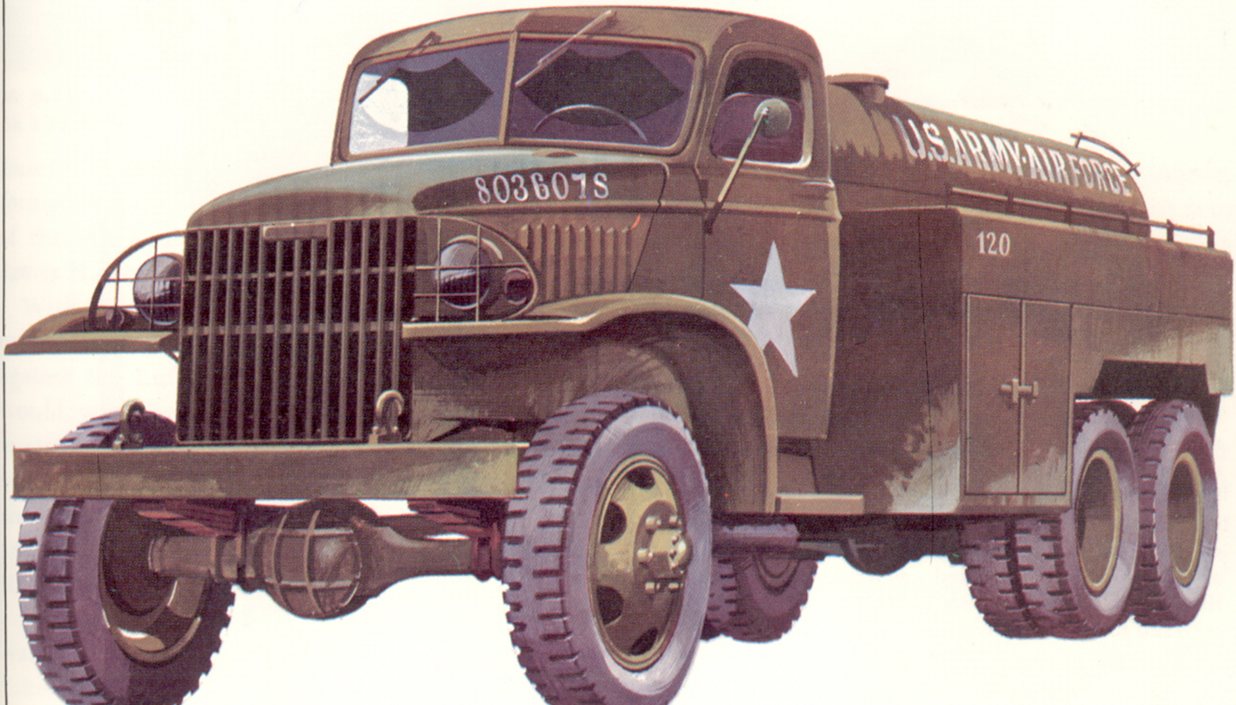

"MEMPHIS BELLE"



Nose insignia – see captions opposite



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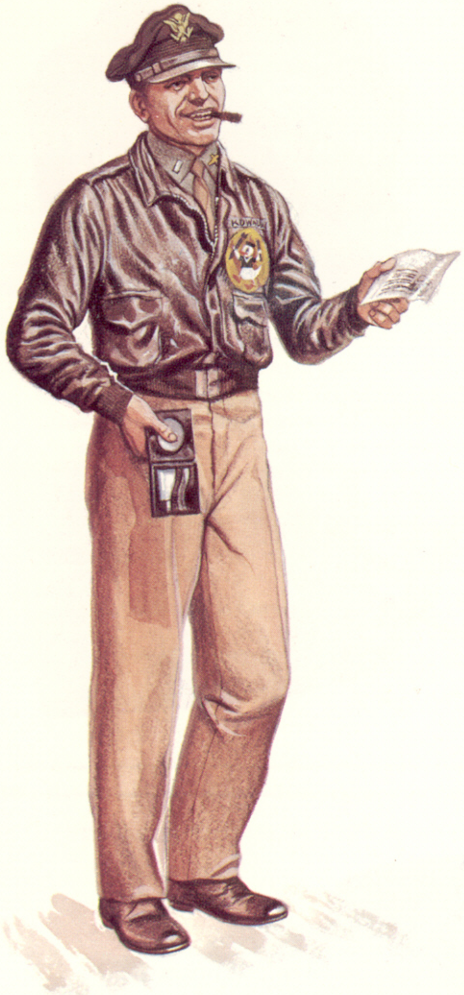
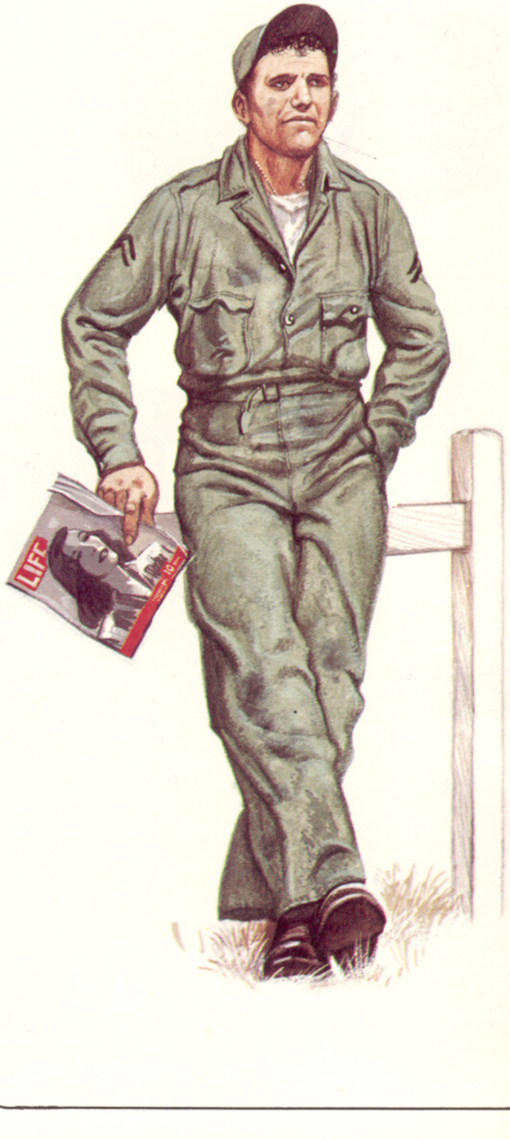


ABOVE: Lieutenant, US 8th Air Force, 1943–45, in casual service dress with the short brown leather jacket much worn by US aircrew officers. The 'olive drab' cap has a bronze national insignia and brown chinstrap and peak. The olive shirt bears the single rank bar in silver on the right collar point, and the Air Force badge in gold on the left. The tie and the slacks are in the shade of light fawn known at the time as 'pink'. A squadron badge is sewn to the breast of the jacket, below a name-tag. Unit badges, individual aircraft names, and crew names and nick-names were painted or sewn onto these jackets with a fine sense of individuality! This officer is amused – as were so many GIs – by the size of the old British white £5 note, which they referred to as a bedsheet.

BELOW: USAAF corporal in groundcrew overalls. Typical of the unsung heroes who froze and became soaked to the skin in the British rain and mud to keep the Forts and Liberators flying, this unusually clean crewman – waiting for the return of 'his' ship – wears the usual 'olive drab' one-piece overalls with built-in belt, and a fatigue cap of the same material. Rank chevrons were often marked on the sleeves with indelible ink, as here.



26. B-17F 42-30407 of the 97th BG flies over Russian collective farms during the 15th Air Force's only 'Frantic' mission on 2 June 1944.

Exactly one month later the 15th Air Force was formed, encompassing the heavy-bomber elements of the 9th and 12th Air Forces, with Maj. Gen. James H. Doolittle commanding.

With the new force in being, Arnold was able to convince the Joint Chiefs that only an all-out effort against the Luftwaffe over the next few months would win the necessary air superiority for the invasion of Europe. He recommended attacks on every facet of single-engined fighter production and operations – factories, repair centres, airfields and installations – under the general codename *Argument*.

Concurrent with the activation of the 15th AF was a restructuring of the USAAF command. Ira Eaker was appointed to head the Mediterranean Allied Air Forces, which then encompassed American, British, French and Italian air units. Doolittle, then heading the 15th, moved to England to take over the 8th and Maj. Gen. Nathan F. Twining filled the vacated position at the head of the 15th. To co-ordinate the operations of both the 8th and 15th Bomber Commands, the US Strategic Air Forces in Europe – USSTAAF – was created in England, with Carl Spaatz in command.

Doolittle could not have taken over the 8th Air Force at a more momentous time – there could be no deviation from the *Argument* plan if the invasion was to proceed, but for the bombers to achieve their purpose, two problems had to be overcome – the weather and fighter escort.

On 3 November, P-38 Lightnings of the 55th FG escorted the heavies to Wilhelmshaven and shot down three enemy fighters for one P-38. Ten

8th Air Force Organisation, Markings, and Bases

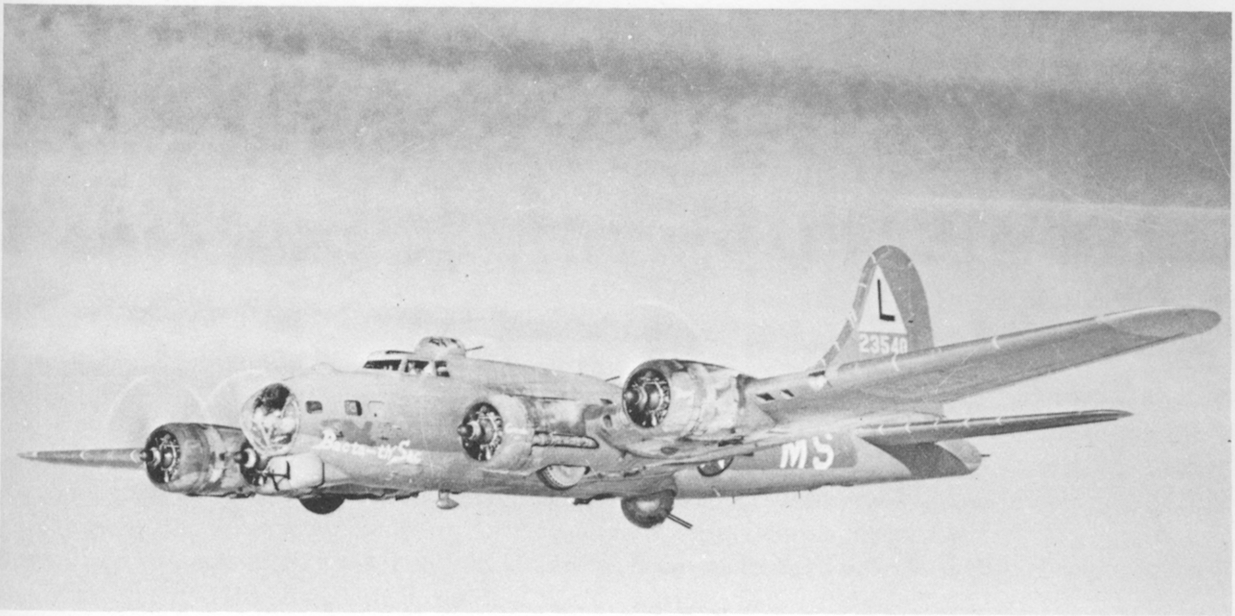
Initially the Groups of 8th Bomber Command were divided into the 1st and 2nd Wings. In September 1943 the Air Division command level was interposed between Command and Wings: 1st, 2nd and 4th Bombardment Wings became 1st, 2nd and 4th Air Divisions, the term Wing remaining in use for sub-divisions within the Divisions. From about June 1943 Wings introduced geometric tail symbols, with Group identification letters. From July 1944 additional distinctive colour markings were applied. The following listing shows Division, Wing, Group and Squadron assignments in 1945. After the Group number the tail marking and letter is shown, and after the Squadron numbers the Squadron fuselage letters. Finally, aircraft type and base are indicated.

1 Div.							
1 Wing	91 Gp, triangle A	– 322(LG)	323(OR)	324(DF)	401(LL)	– B-17	– Bassingbourn, Cambs.
	381 Gp, triangle L	– 532(VE)	533(VP)	534(GD)	535(MS)	– B-17	– Ridgewell, Essex
	398 Gp, triangle W	– 600(N8)	601(30)	602(K8)	603(N7)	– B-17	– Nuthampstead, Herts.
41 Wing	303 Gp, triangle C	– 358(VK)	359(BN)	360(PU)	427(GN)	– B-17	– Molesworth, Hunts.
	379 Gp, triangle K	– 524(WA)	525(FR)	526(LF)	527(FO)	– B-17	– Kimbolton, Hunts.
	384 Gp, triangle P	– 544(SU)	545(JD)	546(BK)	547(SO)	– B-17	– Grafton Underwood, N'hts.
40 Wing	92 Gp, triangle B	– 325(NV)	326(JW)	327(UX)	407(PY)	– B-17	– Podington, Beds.
	305 Gp, triangle G	– 364(WF)	365(XK)	366(KY)	422(JJ)	– B-17	– Chelveston, N'hts.
	306 Gp, triangle H	– 367(GY)	368(BO)	369(WW)	423(RD)	– B-17	– Thurleigh, Beds.
94 Wing	351 Gp, triangle J	– 508(YB)	509(RQ)	510(TU)	511(DS)	– B-17	– Polebrook, N'hts.
	401 Gp, triangle S	– 612(SC)	613(IN)	614(IW)	615(IY)	– B-17	– Deenthorpe, N'hts.
	457 Gp, triangle U	– 748(—)	749(—)	750(—)	751 (—)	– B-17	– Glatton, Hunts.
2 Div.							
2 Wing	389 Gp, circle C	– 564(YO)	565(EE)	566(RR)	567(HP)	– B-24	– Hethel, Norfolk
	445 Gp, circle F	– 700(RN)	701(MK)	702(WV)	703(IS)	– B-24	– Tibenham, Norfolk
	453 Gp, circle J	– 732(E3)	733(E8)	734(F8)	735(H6)	– B-24	– Old Buckenham, Norfolk
14 Wing	44 Gp, circle A	– 66(WQ)	67(NB)	68(GJ)	506(QK)	– B-24	– Shipdham, Norfolk
	392 Gp, circle D	– 576(CI)	577(DC)	578(EC)	579(GC)	– B-24	– Wendling, Norfolk
	491 Gp, circle Z	– 852(3Q)	853(T8)	854(6X)	855(V2)	– B-24	– Nth. Pickenham, Norfolk
20 Wing	93 Gp, circle B	– 328(GO)	329(RE)	330(AG)	409(YM)	– B-24	– Hardwick, Norfolk
	446 Gp, circle H	– 704(FL)	705(HM)	706(RT)	707(JU)	– B-24	– Bungay, Suffolk
	448 Gp, circle I	– 712(CT)	713(IG)	714(EI)	715(IO)	– B-24	– Seething, Norfolk
96 Wing	458 Gp, circle K	– 752(25)	753(J4)	754(7V)	755(J3)	– B-24	– Horsham St. Faith, Norfolk
	466 Gp, circle L	– 784(T9)	785(2U)	786(U8)	787(6L)	– B-24	– Attlebridge, Norfolk
	467 Gp, circle P	– 788(X7)	789(6A)	790(Q2)	791(4Z)	– B-24	– Rackheath, Norfolk
3 Div.							
4 Wing	94 Gp, square A	– 331(QE)	332(XM)	333(TS)	410(GL)	– B-17	– Rougham, Suffolk
	447 Gp, square K	– 708(CQ)	709(IE)	710(IJ)	711(IR)	– B-17	– Rattlesden, Suffolk
	486 Gp, square W	832(3R)	833(2N)	834(2S)	835(H8)	– B-17	– Sudbury, Suffolk
	487 Gp, square P	– 836(2G)	837(4F)	838(2C)	839(R5)	– B-17	– Lavenham, Suffolk
13 Wing	95 Gp, square B	– 334(BG)	335(OE)	336(ET)	412(QW)	– B-17	– Horham, Suffolk
	100 Gp, square D	– 349(XR)	350(LN)	351(EP)	418(LD)	– B-17	– Thorpe Abbots, Norfolk
	390 Gp, square J	– 568(BI)	569(CC)	570(DI)	571(FC)	– B-17	– Framlingham, Suffolk
*93 Wing**	34 Gp, S	– 4(Q6)	7(R2)	18(8I)	391(3L)	– B-17	– Mendlesham, Suffolk
	385 Gp, G	– 548(GX)	549(XA)	550(SG)	551(HR)	– B-17	– Great Ashfield, Suffolk
	490 Gp, T	– 848(7W)	849(W8)	850(7Q)	851(S3)	– B-17	– Eye, Suffolk
	493 Gp, X	– 860(NG)	861(Q4)	862(8M)	863(G6)	– B-17	– Debach, Suffolk
45 Wing	96 Gp, square C	– 337(QJ)	338(BX)	339(AW)	413(MZ)	– B-17	– Snetterton Heath, Norfolk
	388 Gp. square H	– 560(—)	561(—)	562(—)	563(—)	– B-17	– Knettishall, Suffolk
	452 Gp, square L	– 728(9Z)	729(M3)	730(6K)	731(7D)	– B-17	– Deopham Green, Norfolk

*The 34th, 490th and 493rd Groups were originally equipped with B-24s, and their square symbols were not authorised for use on B-17s; even so, old symbols and letters were sometimes observed. The 385th Group was assigned to the 93rd Wing from the 4th Wing early in 1945. The squadron codes of all squadrons of 93rd Wing were assigned, but not used during the war, neither were they by the 447th and 452nd Groups.

Re-assigned, 1944
489 Gp, comprising 844(4R), 845(S4), 846(8R), 847(T4) Sqns. – B-24 – Halesworth, Suffolk
Disbanded, 1944
492 Gp, comprising 856(5Z), 857(9H), 858(9A), 859(X4) Sqns. – B-24 – Nth. Pickenham, Norfolk
Special Duties, 1 Div.
482 Gp, comprising 812(MI), 813(PC), 814(SI) Sqns. – B-17, B-24 – Alconbury, Hunts.

days later it was a different story, when the Lightings were boxed by German fighters numbering five times their own force. Seven P-38s were lost and sixteen were damaged. Good though the P-38 was in other theatres, it had a chequered career on escort work in Europe, where it was considerably troubled by cold weather. Temperatures of 60 degrees below zero were common



27. High in the thin, condensation-filled air over Europe, a waist gunner photographed this 535th BS ship – B-17F 42-3540, feelingly christened 'Bacta-th' Sac' – en route for the target: a superb study of the most photogenic bomber of the war.

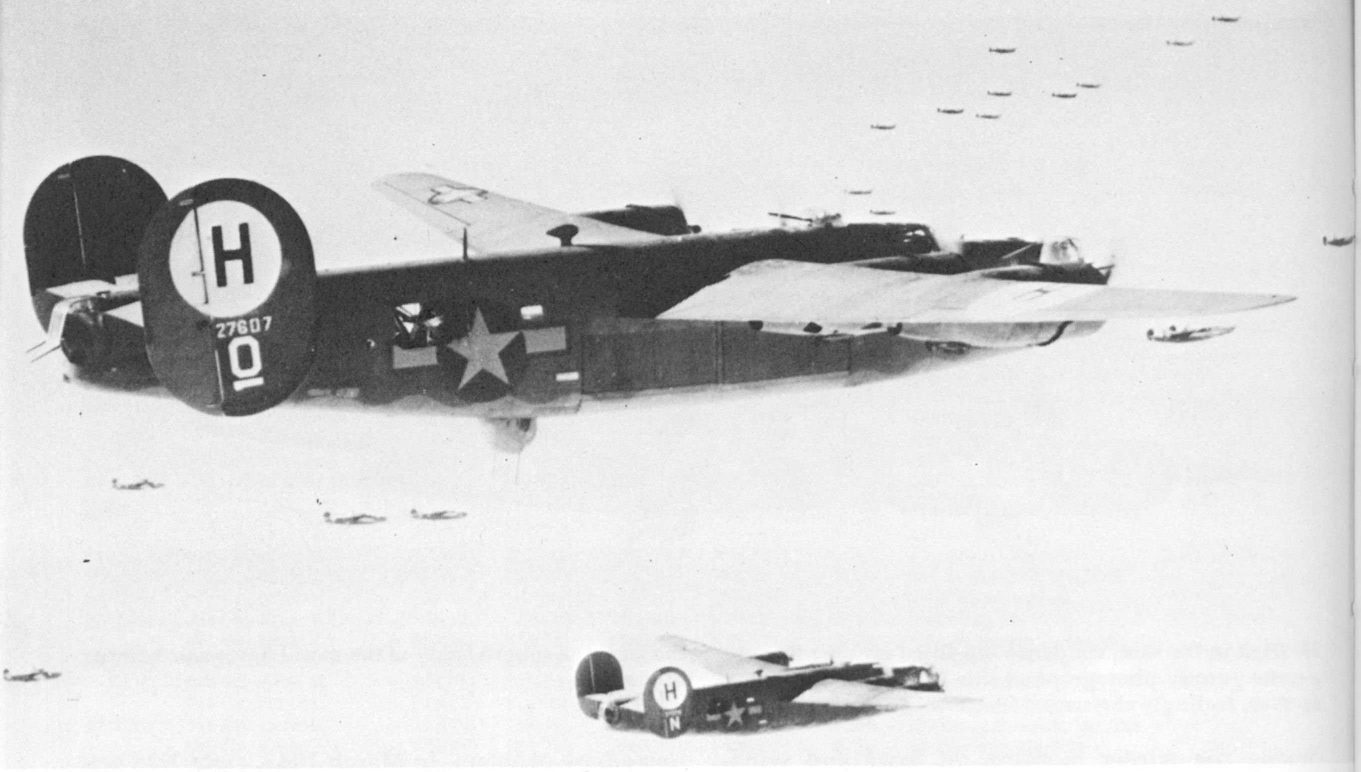
during the winter months; oil froze and windscreens became opaque at the 30,000 feet altitudes favoured by the bombers.

USAAF hopes for a fighter that could double the range of the P-47, then able to accompany bombers 375 miles to the Frankfurt area, were shifted to the P-51 Mustang. There were precious few Mustangs in the ETO at the end of 1943, the only group so equipped being the 354th, assigned to the 9th Air Force. The group was therefore loaned to the 8th Fighter Command and flew its first short-range escort on 5 December. But with its potential to fly as far as Czechoslovakia from bases in the UK, the Mustang finally closed the escort gap.

Ways had also been found for the bombers to hit their targets despite thick weather. Experiments with the RAF beam navigation aids, Gee and Oboe, had found both wanting as far as US requirements went. The former device was not accurate enough for precision attacks and Oboe, while fine over short distances, could not be used on the deep penetration missions the 8th was then committed to. However H2S, the radar installation that transmitted a beam from the aircraft to scan the terrain it was flying over and presented it in the form of a map-like display on a cathode-ray tube, was the answer to the American bomber force's immediate problem. In March 1943, eight H2S sets had been used for trials pending supply of American-made sets, designated H2X, and known as 'Mickey' to bomber crews.

The 482nd BG at Alconbury had twelve B-17s fitted with H2X by September 1943 and further aircraft and crews were assigned for training with the new equipment. The group was a unique 8th AF formation; it pioneered radar bombing techniques and was the only one activated in the

28. Liberators of the 451st BG, 49th Wing, 15th Air Force make their way along the dusty taxiway of Castelluccio airfield to take off for a mission on a memorable day – 6 June 1944.



29. Against a sky full of friends, B-24H 42-7607 flies as part of a 24-ship formation from the 2nd Division en route for Germany on 24 November 1944. The two aircraft whose markings are visible are from the 446th BG at Bungay; '607, her ball turret gunner looking for trouble, has a bar beneath the ID letter. In the 93rd BG this identified squadrons, but not, apparently, in the 446th.

UK during hostilities. Going operational at the end of October, the 482nd led the first 8th AF radar bombing mission, to Wilhelmshaven on 3 November. Nine H2X aircraft and three with H2S directed 539 heavies to the city, situated near an estuary of the River Weser, the land and water contrast making for a good cathode-ray tube image. Post-mission photographs showed that the aiming point had been hit and although the results were not as good as were possible with visual aiming, they were encouraging – the weather need no longer keep the 8th AF on the ground in winter.

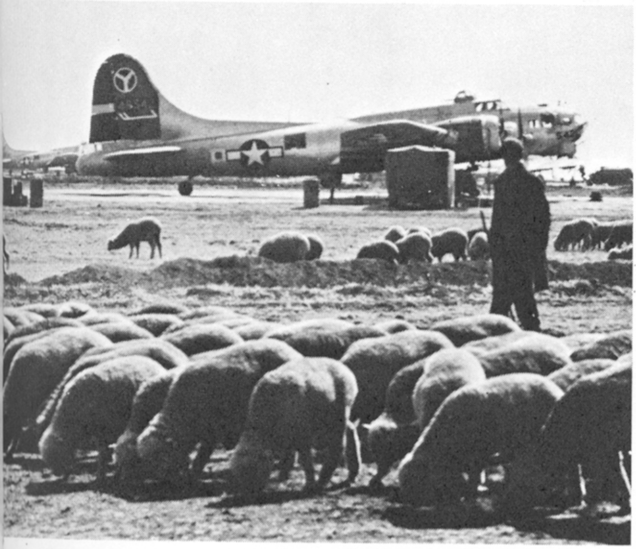
Few winter days in 1942–43 were clear enough for Norden bombing, exceptions being a number of November sorties to Norway. On the first of them, a strike on the molybdenum mines at Knaben, the 303rd Group's B-17F *Knockout Dropper* completed 50 missions, the first 8th AF Fortress to do so.

Then it was back to Germany and cold overcasts, which although obscuring the bombers' targets also afforded them some protection – Luftwaffe fighters could rarely penetrate the murk in sufficient numbers to make co-ordinated interceptions. To defend themselves, both B-17s and B-24s had improved nose-turret armament by the end of 1943.

The planning that culminated in the *Argument* attacks of 'Big Week' in February 1944, was placed in the capable hands of Maj. Gen. Frederick L. Anderson, working closely with and directly responsible to Spaatz. A firm believer in US daylight precision bombing, Anderson held the view that the destruction of the German fighter forces could be accomplished by the elimination of five main production centres, situated at Leipzig, Wiener Neustadt and Regensburg and including two industrial centres in central and eastern Germany with five and six plants respectively. There were enough targets to keep the strategic air forces busy for several months under normal circumstances. Anderson had barely two, and he was also expected to hit centres connected with the production of the twin-engined aircraft that were the main adversaries of the RAF night bombers. These, plus aero-engine plants, added another eighteen factories in fourteen cities.

Anderson likened *Argument* to the killing of a giant octopus, and to do it he was prepared to expend two-thirds of his heavy-bomber strength. Gen. Arnold summed up the task thus: 'We can expect heavier than normal losses since we are taking more than ordinary risks.' But that risk was not as great as it might have been six months earlier; there was radar to help the bombers, 'Chaff', the US name for the British 'Window', to saturate enemy radar screens, and 'Carpet', the codename for the jamming of his radar frequencies. Most of all, there was the North American Mustang. The 354th Group had scored its first confirmed victory on 16 December while escorting bombers to Bremen; and on 5 January 1944, between Meldorf and Kiel, the P-51Bs shot down no less than eighteen Bf 110s. In the air and by airfield strafing attacks on the ground, the fighters helped pave the way for the heavies.

On 20 February, the 8th Air Force was unleashed on the first *Argument* mission, a 1,028 aircraft strike on Leipzig. To Anderson's great relief the weather had cleared for the first time in days; although radar bombing could have been used, he wanted visual conditions if possible. The targets were considered too important for the sort of results the 8th could then achieve by blind bombing. Recent events in the Mediterranean also meant that for the most part *Argument* would be the responsibility of the 8th, Eaker's 15th AF being committed to support of the Allied armies breaking out of the Anzio beach-head.

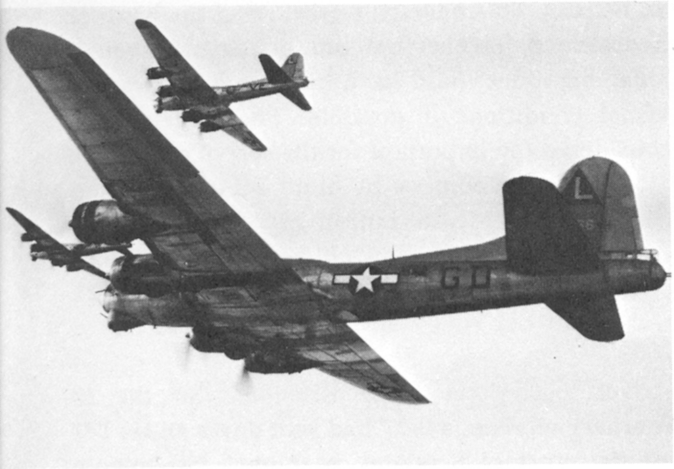


30. A pastoral scene at Amendola, Italy, base of the 15th Air Force's 2nd BG; B-17Gs of the 429th BS are lined up in the background. The nearest Fort, 44-6542, bears the Y-in-a-circle tail symbol of the 5th Wing, 2nd Group, and the key motif denotes the squadron. The rudder is insignia blue with a white horizontal band, and single blue bands encircle the wings. Although not obvious in this picture, the nearest machine would almost certainly have blue elevators as well. The last three digits of the serial appear on the nose in black.

Well before the force assembled for the 20 February mission, a B-17 had shot down an He 177 off the coast of Scotland. Making a last minute weather reconnaissance, the Fortress had picked up radio signals from the Heinkel, which was believed to have been intending to transmit early warning of a build-up of US heavies to Luftwaffe fighter control. Other German aircraft had been reported in the area engaged on 'spoofing' sorties – sending fake radio signals on the Prestwick waveband to lead incoming replacement bombers from the US out into the North Sea.

For the cost of 26 heavies and four fighters, the first *Argument* mission was very encouraging, all twelve targets being bombed and a considerable number of fighters being seen to be destroyed. For the next five days the weather held as forecast, enabling the 8th to press home its attacks. The 15th AF participated in *Argument* for the first time on the 25th, a tough mission to Regensburg. The Italian-based Liberator groups lost 33 aircraft from the force of 176 despatched, nearly one-fifth. Overall, *Argument* was to cost the USAAF 226 heavy bombers, far fewer than expected, and by late February replacements were able to bring depleted groups back to full strength quickly.

March 6 recorded the 8th's highest bomber loss of the war when 69 aircraft went down during a mission to Berlin. Almost 100 enemy fighters were destroyed in the wild air battles over the capital in the third of five missions the 8th flew to 'Big B' that month. It was a turning point in the air war; henceforth, the Luftwaffe never recovered its old aggressiveness. By April, the 8th was in a position regularly to send 1,000 bombers against a given target, with the 15th contributing an average of 500 – the first priority of *Pointblank* had been



31. The basic three-ship combat element of the 8th Air Force demonstrated by two B-17Gs from the 381st BG's 532nd BS (top) and one (foreground) from the 534th BS. Note fully retracted H2X housing on the nearest machine.

achieved, not so much by actual bombing, but by the gruelling rate at which Luftwaffe fighters were forced to fly in the face of steadily rising losses.

TACTICAL TARGETS & SHUTTLES

The 15th AF found the winter weather as much trouble in Italy as the 8th had in England – much worse than had been anticipated. Only sixteen days of February were good enough for operations and fourteen in March, the lowest for one month for all 1944. On average the bombers would be stood down for eight days a month during the year, torrential rain often turning airfields into quagmires. But the bases were within striking distance of targets that could not be reached by the 8th and the 15th was able to keep up the pressure in the spring of 1944 much more than its sister force. Then, the 8th was increasingly occupied with tactical targets in support of the invasion, and the reduction of the V-weapons offensive by bombing *Noball* sites.

On 14 April, all strategic bombers in Europe were placed under the command of Supreme HQ, Allied Expeditionary Force – SHAEF – for Operation *Overlord*. There was no immediate change in targets and those specified by the CBO directive were hit as often as possible. April 5 saw the first of a series of attacks on centres of oil supply, the 15th AF mounting three strikes on Ploesti during the month. On the 24th the 8th sent 720 heavies against airfield targets in the Munich area and found the Luftwaffe up in force. Heavy flak also decimated the B-17s, and thirteen aircraft had to put down in neutral Switzerland. Over 70 B-17s and 81 B-24s would seek refuge there by the end of the war, while others were interned in Sweden.

Oil centres had had a low bombing priority since the 1 August Ploesti raid, and Spaatz felt that *Argument* was a legitimate reason to re-open the offensive against them, but there were those who disagreed. Some British chiefs particularly had a preference for mass attacks on enemy transportation and Spaatz was forced to compromise – on the first of the April Ploesti missions, the target was officially rail yards which just happened to run into the refineries! That oil was vital to the enemy was shown by the increased flak protection these vulnerable centres received – eliminating them would be extremely costly. To cut losses, everything was done to avoid over-flying known flak belts and 'hot spots'; smaller formations and evasive action helped, but the heavies remained vulnerable during their necessarily long, straight bomb runs. The Liberators of the 15th were particularly hard hit by the oil campaign.

The first 8th AF attack on oil was on 12 May 1944, when nearly 900 aircraft hit six targets, challenged by hundreds of German fighters. On D-Day, the last US heavy bomber group to see action in Europe went operational with the 8th, to bring the UK-based force to 41 groups with approximately 2,100 aircraft (21 with B-17s and nineteen with Liberators plus the pathfinder 482nd using both types and others). In Italy the 15th could call upon 21 groups, six with Fortresses and fifteen with B-24s, some 1,500 aircraft in all. In June, Spaatz received high level approval of his oil targets.

To bring more distant targets within range of bombers based in Italy and England, negotiations were opened with the Russians to provide suitable airfields for shuttle missions, under the codename

32. A classic view of Fortresses of the 381st BG outward bound over Europe in 1944. The nearest B-17G, 44-6173, is coded GD-H of the 534th BS.

L
46173
H
GD

15th Air Force Organisation, Equipment and Bases

5 Wing	2 Gp:	20, 49, 96, 429 Sqns.	– B-17	– Amendola
	97 Gp:	340, 341, 342, 414 Sqns.	– B-17	– Amendola
	99 Gp:	346, 347, 348, 416 Sqns.	– B-17	– Tortorella
	301 Gp:	32, 352, 353, 419 Sqns.	– B-17	– Lucera
	463 Gp:	772, 773, 774, 775 Sqns.	– B-17	– Celone
	483 Gp:	815, 816, 817, 840 Sqns.	– B-17	– Sterparone
47 Wing	98 Gp:	343, 344, 345, 415 Sqns.	– B-24	– Lecce
	376 Gp:	512, 513, 514, 515 Sqns.	– B-24	– San Pancrazio
	449 Gp:	716, 717, 718, 719 Sqns.	– B-24	– Grottaglie
	450 Gp:	720, 721, 722, 723 Sqns.	– B-24	– Manduria
49 Wing	451 Gp:	724, 725, 726, 727 Sqns.	– B-24	– Castelluccio
	461 Gp:	764, 765, 766, 767 Sqns.	– B-24	– Torretto
	484 Gp:	824, 825, 826, 827 Sqns.	– B-24	– Torretto
55 Wing	460 Gp:	760, 761, 762, 763 Sqns.	– B-24	– Spinazzola
	464 Gp:	776, 777, 778, 779 Sqns.	– B-24	– Pantanella
	465 Gp:	780, 781, 782, 783 Sqns.	– B-24	– Pantanella
	485 Gp:	828, 829, 830, 831 Sqns.	– B-24	– Venosa
304 Wing	454 Gp:	736, 737, 738, 739 Sqns.	– B-24	– San Giovanni
	455 Gp:	740, 741, 742, 743 Sqns.	– B-24	– San Giovanni
	456 Gp:	744, 745, 746, 747 Sqns.	– B-24	– Stornara
	459 Gp:	756, 757, 758, 759 Sqns.	– B-24	– Giulia

You Never Know

33. No matter how sophisticated the equipment, some long-suffering guy with a mop will always be needed to keep it shining . . . Cpl. Charles W. Lusk gives B-17G 42-32086 a quick going over at Glatton, Hunts., the wartime home of the 457th BG – the *Fireballs*.

Frantic. Following the first shuttle bombing experiment on 17 August 1943, it was estimated that with Soviet co-operation, a great deal could be achieved – more targets could be attacked and the aircraft would not have to face already-alerted defences on their way out of the target area. After lengthy and frustrating talks, during which the Americans were bound to meet unreasonable requests from Stalin, it was agreed that a number of bases would be provided in the Ukraine. On 2 June the 15th AF flew the first *Frantic* mission, 130 B-17s striking rail targets in Hungary and proceeding to fly east to airfields in the vicinity of Kiev. Two days later, the force returned to Russia after bombing a Rumanian airfield, and attacked a second such facility en route to Italy a week later. Only two Fortresses had been lost during these operations and things seemed to bode well as the 8th AF prepared for its first *Frantic* run on 21 June.

Under the protection of Mustangs of the 4th FG and the 486th Sqn. of the 352nd Group, 163 B-17s were despatched to a synthetic oil plant south of Berlin, which was duly bombed with good results. The force reached Soviet territory and put down on airfields at Poltava and Mirgorod, the Mustangs being installed at Piryatin. Five hours after the American bombers arrived, a strong force of He 111s and Ju 88s made a highly effective attack on their two bases, destroying 44 aircraft, damaging 26 and sending ammunition and thousands of gallons of fuel up in flames. The number of aircraft that went down during other missions on 21 June, added to those lost on the first shuttle mission amounted to 88 Fortresses – an all-time high for a 24 hour period.

The survivors of the brilliant Luftwaffe raid made their way to Italy after bombing a Polish oil plant, flew one more mission with the 15th AF, and finally attacked a French rail yard before touching down in England again. The 15th AF did not repeat its first *Frantic* mission although the 8th flew three more in August and September before the plan was abandoned, killed by lack of co-operation from the Russians and the obvious risk of another Poltava.

In the period immediately following the invasion of Normandy the 8th AF's primary area of operations was France, missions not always involving bombing. On 25 June Fortresses undertook their first supply sorties to the French *Maquis*. Dropping down to 2,000 feet, they delivered many tons of arms and ammunition, as well as a number of OSS agents. Under the guise of a normal bomb group, the 301st (Provisional) was formed as a 'Carpetbagger' outfit, for the regular clandestine delivery of agents into occupied territory. Later, for Operation *Anvil*, the invasion of southern France, the 15th AF carried out similar duties, its specialist unit being the 885th BS.

The 8th AF was able to hit some strategic targets in Germany in July, including those in the vicinity of Leipzig, Munich, Schweinfurt and Regensburg, but much of the month saw the bombers engaged upon army support. On the 18th, some 2,000 US and British aircraft poured 7,700 tons of bombs into the rubble of Caen and seven days later the 8th joined with the 9th AF to pound St. Lô with a further 3,400 tons. Such was the pace of these operations that many crewmen completed their obligatory tour of 30 missions in two months. The number of missions had been raised to 30 after D-Day and would rise to 35 by the summer, it being estimated that an individual stood a much better chance of survival in 1944 – 70 per cent against 35 per cent early in 1943 – and could therefore fly more missions. Understandably, the order was unpopular amongst crews; Doolittle explained:

'It takes a bomber crew about ten missions to learn its trade. Very few crews do accurate bombing during those ten missions. Then a crew does a pretty good job during its next 15 missions. By the time it's had its 25 it has really reached the peak of maximum efficiency. Then we take it off the line. That just doesn't make sense. A crew that has been through 25 missions knows how to take care of itself; it knows the tricks of evading flak and of getting away from German fighters. I know it was different a year ago but you men aren't flying suicide missions now. Study the charts and you'll see that most crews which have made more than 20 missions come home all right. More important, our average loss rate is dropping steadily.'

Both the US bomber forces' accuracy had improved to reach an average of 47 per cent (8th) and 50 per cent (15th) of bombs within 1,000 feet of the AP by the summer. Losses continued to be heavy, particularly among the 15th's Liberators, which kept up the pressure on oil targets.

The revelation that the Germans had jet aircraft ready for combat led the 8th to despatch the first of a number of attacks on airfields suspected of harbouring them on July 20. Eight days later, Me 163s were seen in the air by bomber crews for the first time.

July also saw the first use by the 8th of scouting

34. Minding the twin'fifties in the Consolidated tail turret of B-24J 42-50907 is S/Sgt. Otto A. Sobanjo, who flew at least 30 missions and held the DFC and Air Medal with three Oak Leaf Clusters.

35. Meanwhile, up front . . . S/Sgt. Edward J. Mickey in the Emerson nose turret of a B-24. Nose turret armament was an important factor in cutting losses from the head-on attacks which claimed so many.

force P-51s, employed to sweep ahead of the bomber force and provide an up-to-the-minute check on weather conditions, enemy fighter build-up and other activity in the target area before the main force reached the IP. Flown mainly by 'retread' bomber pilots who knew the bombers' limitations, the Mustang scouts helped eliminate the frustrations of a sudden overcast obscuring the target at the last moment, and could advise alternative routes or targets in advance. Col. Budd Peaslee, who had come to England as CO of the 384th Group and had led a number of tough operations, was responsible for the formation of the 1st Group Scouting Force, which made its combat debut on 16 July. The 2nd and 3rd Air Divisions thereafter established their own such forces, all equipped with Mustangs.

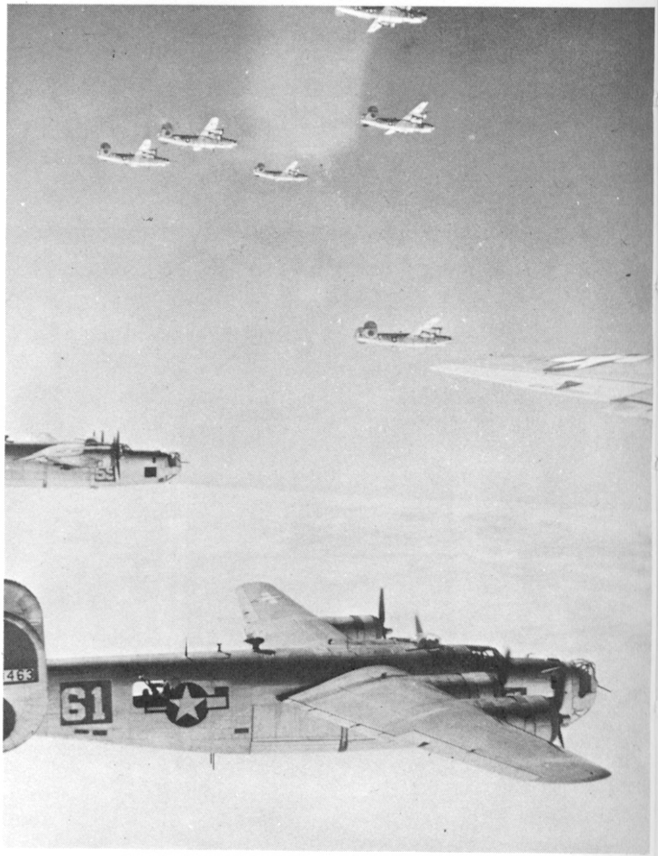
Peenamunde, Berlin and Ploesti figured in the 8th and 15th Air Forces' target list in August, the month that was to see the final bombs aimed at the Rumanian oil fields drop from the bays of RAF aircraft. To cut Ploesti down to 20 per cent of capacity had cost 286 US heavy bombers and 38 British in 23 heavy raids, in which 13,709 tons were dropped.

A far greater weight of explosive – some 30,000 tons by the 8th AF alone – was dropped onto the German rail network at the end of the year. Impressive though the tonnage was, railways remained extremely hard targets for the heavies to wreck completely; despite the destruction of many centres, essential supplies still managed to reach the front lines.

NEW FIGHTER TACTICS

The timely dispersal of the German aircraft industry in mid-1943 began to bear fruit towards the end of 1944 when USAAF daylight raids were once again challenged by sizeable numbers of fighters. It was virtually impossible for Allied bombers to destroy all the sub-factories supplying the parent plants – reconnaissance alone estimated that there were 700 of them in operation.

August recorded the first actual contact with Me 163s by the bombers, and thereafter sporadic attacks by the diminutive rocket fighter and turbojet Me 262 would continue until May 1945. Bomber crews came to recognise the 'roller coaster' attack of the Me 262s, a technique designed to enable the fast German machine to slow down for a maximum duration pass at the heavies which cruised at around 175 mph. To use their heavy cannon to best effect, the 262s would plunge through the US fighter escort from high altitude at about 550 mph, pull up sharply below and behind the bomber formation and initiate a same-level run from about 1,000 yards behind. Using this tactic, the jets could stalk their quarry at about 100 mph, the German pilot being confident that his Mk 103 cannon needed less than five rounds in a vital spot to bring him a bomber kill. These revolutionary new aircraft were to cost the Americans 52 heavy bombers by the end of the war, and it was a great relief to USAAF commanders that the threat posed by them did not materialise in greater numbers.

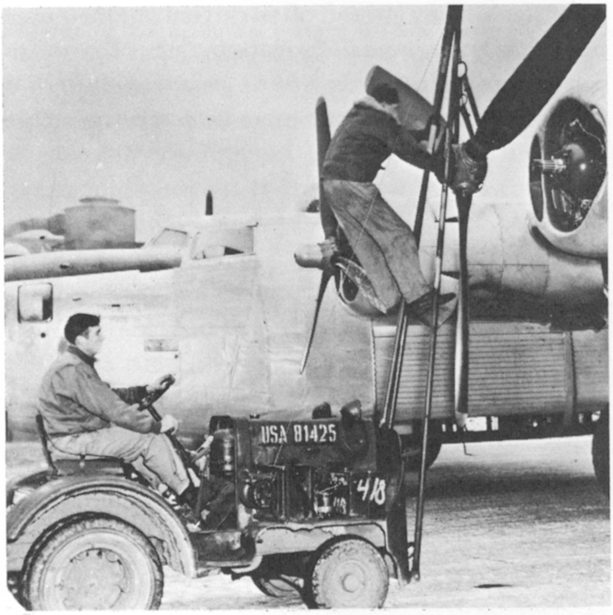


36. The red markings of the 351st BG are carried to war by Liberators of the 15th Air Force. Aircraft of both the 725th BS (aircraft numbers in the 20–39 range) and the 726th (50–59 range) are visible here.

While strong fighter opposition was encountered in 1944, it was obvious that the standard of flying skill of the majority of enemy pilots was lower than before. There were then great numbers of US fighters to decimate the already fatally weakened Luftwaffe, both in the air and on the ground. However, on those occasions when the Germans were able to break through the fighter screen and attack the bombers, they were well able to claim victims. In the late spring of 1944 the *Sturmgruppen* tactics, whereby a large formation of (usually) Fw 190s flew 'interference' for a specially armoured bomber-killer squadron, shepherding them through the P-51s to get at the Forts, caused a number of casualties; but Lt. Stigler of JG 27 recalls how hard the task of the interceptors had become:

'By the spring of 1944, all our 109s and 190s were heavily armoured. With the introduction of wing cannon in the 109, our old fighter became a truck. I refused to fly with the additional 20-mm cannon slung in pods under the wing – they were good against bombers, but greatly hampered lateral control, cut speed significantly and because of the high loads encountered, often jammed. Worst of all, when we met escorting fighters of any kind, we were at a mortal disadvantage. It was not worth your life to be caught flying a 109 with wing cannon against a Mustang. Most of the pilots in my squadron elected to stick with the Bf 109G-6 with its two 13-mm cowl guns and single MG 151 20-mm firing through the propeller hub.'

Later still, some diehard elements in the Luftwaffe dreamed up the idea of ramming heavy bombers to bring them down. A special unit, *Sonderkommando Elbe,* was formed for the purpose, and pilots were instructed to line up on a Fortress or Liberator and bail out just before impact. Fortunately, such desperate measures were frowned upon by the majority of fighter pilots and these virtual suicide attacks were few. But there could be no relaxing of vigilance in the skies over Germany, as was made starkly clear on 7 July, when over 100 fighters attacked and shot down twenty 2nd Division B-24s.



37. It usually took three men two hours to lift a 500 lb propeller off a Liberator; but S/Sgt. Joe Flitter of ASC cut the job to 45 minutes with his ingenious 'Rube Goldberg' crane. It was made from a standard airfield tug vehicle with a hoist and boom crafted from a B-17 bomb hoist and a B-24 landing gear retraction unit.

When the Germans made their surprise thrust through American lines in the Ardennes in December 1944, under cover of bad weather that grounded most Allied tactical aircraft on the continent, the 8th AF was asked to help stem the advance. For ten days the heavies flew through fog, rain and sleet to dump nearly 100,000 tons of bombs on tank columns and troop concentrations. On Christmas Eve 2,055 bombers, protected by 1,024 fighters, unloaded on communications centres and choke points in the enemy's rear in the largest single mission of the war. The pattern would continue until the last German offensive in the West petered out.

The 15th AF was meanwhile making some of its most accurate strikes on oil centres, using radar to bomb on 80 per cent of its winter missions. By then this force was showing an average bombing accuracy twice as good as the 8th, due mainly to its better use of BTO – bombing through overcast – devices. One reason for its better showing in blind bombing was that the 15th Air Force chose to concentrate its blind-bombing specialists in one part of the bomber force, rather than have special sections in each group, as did the 8th. Each 15th AF group was part of Red or Blue Force, the former charged with attacks on major German targets, using pathfinders when necessary, the latter undertaking visual strikes on targets in Italy. Late in

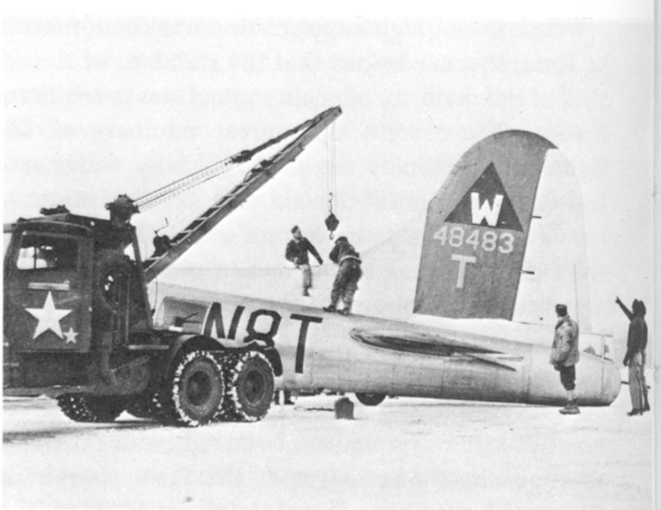
1944 the Mickey aircraft often carried out their own missions, flying a small formation, rather than leading a large main force.

New radar equipment came into service before the end of hostilities, including Micro-H, a development of Gee and G-H for pin-point target location, and AN/APQ-7 Eagle, which gave a clearer radar image.

Wider in scope than previous tactical strikes was Operation *Clarion*, designed to help the Allies' final assault on Germany; both the 8th and 15th were committed and were briefed to bomb from 10,000 feet for maximum accuracy. On 22 and 23 February 1945, more than 2,000 heavies stormed across the remains of the Third Reich, smashing railways, roads, bridges and airfields in the largest combined air strike of the war.

Ranging now to the far corners of Europe, the heavies kept up the pressure on oil, troop concentrations and communications, giving the enemy little time to regroup and thereby prolong the war. Liberators from Italy carried on their assault on one of their most heavily defended targets – Vienna. The city's oil refineries and rail links were all but eliminated by 21 February, when 500 B-24s poured their bombs into the badly-damaged facilities. In the last months of the war, many American targets were by necessity more of an 'area' rather than a 'precision' nature, although aiming points remained similar to those bombardiers had been used to – factories, marshalling yards and so forth. Realisation that small HE bombs were useless against structures such as submarine pens led the 8th to combat-test the Disney rocket bomb. On 14 March, B-17s of the 92nd BG dropped a number of them on the E-boat pens at Ijmuiden with encouraging results. Some months earlier another new weapon, the Azon bomb, was tested by both the 8th and 15th AFs. Azon was a standard 1,000 lb GP bomb with controls built into the tail and guided to the target by the bombardier, either visually by sighting a flare in the tail, or by radio command.

On 25 May B-17s of the 8th carried BG-1 glider bombs into action for the first time on a mission to Cologne. An Aeronca-designed airframe enclosed a pre-set 2,000 lb bomb which could be sent against a target at a speed of 230 mph. Such new weapons had few advantages over conventional bombs, however, and in the case of the glide bomb the necessary low altitude for release exposed the parent aircraft to heavy flak. More effective were incendiary devices, which included the M47A2 jellied petrol bomb and the M76 incendiary. Larger incendiaries were made possible by filling fighter-type drop tanks with the necessary combustible mixture. Six of the 108 gal. variety could be accommodated internally by both the Fortress and Liberator.



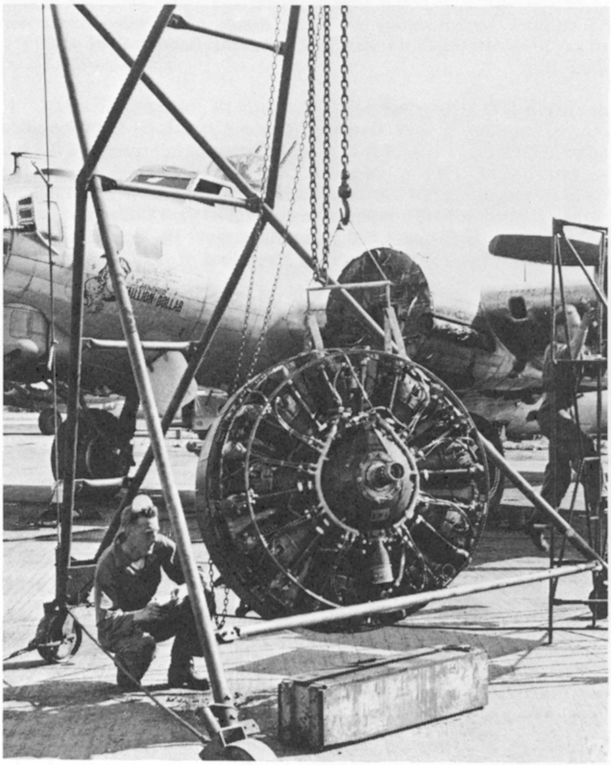
38. With an airfield crane providing mechanical muscle, ground crewmen prepare to lift B-17G 44-8483, N8-T of the 600th BS, 398th BG off its ass after a tailwheel collapse on landing at Nuthampstead, Herts., during winter 1944–45. Note yellow serial and ID letter on the red fin strip of the 1st Wing, 1st Division.

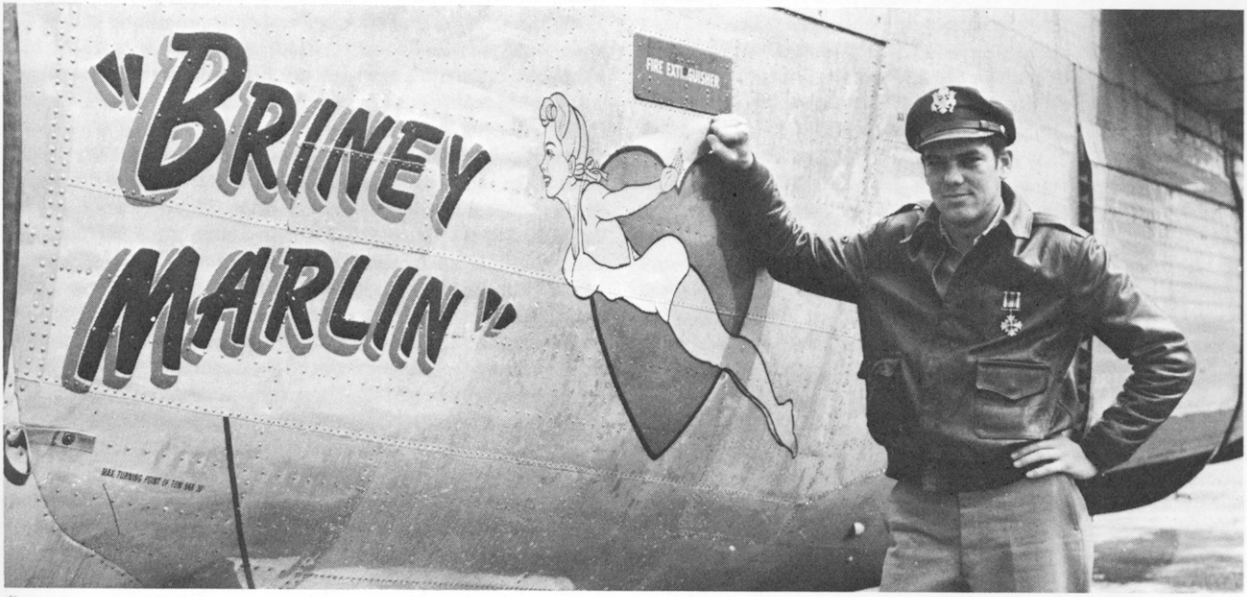
During March, the 8th AF 4th Combat Wing groups introduced a four-squadron nine-ship formation in place of the usual three-squadron twelve-ship one, the fourth squadron being positioned centrally behind the others to complete a diamond pattern. It was generally felt that the new formations were easier to maintain and gave a better bomb pattern.

Stubbornly holding out until the bitter end, German troops in Italy and the homeland were relentlessly hammered by the strategic bombers until April 1945, which was to be their last month of operations. On the 15th of the month the largest force ever put into the air by the 15th Air Force was marshalled to plaster enemy positions facing Allied ground forces breaking through at Bologna. No less than 1,235 heavy bombers, virtually every one that could fly, laid a carpet of bombs on strongpoints and troops. Having bombed the enemy where he stood, the 15th then went out to stop him fleeing Italy, the tactical support strikes being interspersed with rail targets in Austria.

With all of northern Germany at its mercy, the 8th carried out missions against Dresden and Berlin rail links and airfields, and installations in Czechoslovakia. On 25 April the 8th Air Force flew its last operation of the war, an attack on the Skoda armaments works at Pilsen. While 283 B-24s hit rail centres in Salzburg, Bad Reichenhall, Hallstein and Traustein, 1st Division B-17s unloaded in perfect visibility on the munitions complex. Czech workers had been warned by radio that the 8th might bomb the plant and the alerted German flak, true to form, claimed six bombers. At precisely 11.16 hours, the last of 696,450 tons of bombs dropped by the 8th Air Force left the shackles of B-17G *Swamp Angel* and the formation turned for home. By coincidence, home for *Swamp Angel* and her sisters of the 384th BG was Grafton Underwood, from which the first dozen B-17Es had set out for Rouen 34 months before. For the largest bomber force in history, it was time to go home.

39. One of the 1,200 hp Wright R-1820s is lifted out of 'Hundred Million Dollar Baby', a B-17G of the 379th BG, at Kimbolton, Hunts., on 19 April 1945.





40. A fitting tailpiece . . . crushed caps, leather jackets, and buxom painted ladies sum up the image of the most dangerous group of young men ever to fly into combat. Their age died with the flowering of the mushroom cloud over Hiroshima, but they wrote a great chapter in the story of air warfare. Here 1st Lt. Lester C. Martin wears the DFC he won bringing 'Briney Marlin' safe home in July 1944. This B-24H, 42-95183, J4-U of the 753rd BS, 458th BG, collided with another Liberator and lost seven feet of its starboard wing during formation assembly over the North Sea. The machine spun, with the wing hanging straight down, but Lt. Martin managed to right it.

Consolidated B-24H Liberator
Powerplant Four Pratt & Whitney R-1830-65 Twin Wasp radials of 1,200 hp each *Span* 110 ft *Length* 67 ft 2 ins *Height* 18 ft *Wing area* 1,048 sq ft *Weight empty* 36,500 lbs *Combat weight* 65,000 lbs *Maximum speed* 290 mph at 25,000 ft *Cruising speed* 215 mph *Climb to 20,000 ft* 25 minutes *Service ceiling* 28,000 ft *Range* 1,700 miles *Armament* 10 × 0.50-in MG (eight if radar fitted) + normal bomb load of 5,000 lbs *Crew* 10.

Boeing B-17G Flying Fortress
Powerplant Four Wright R-1820-97 Cyclone radials of 1,200 hp each *Span* 103 ft 9 ins *Length* 74 ft 4 ins with Cheyenne tail turret, 74 ft 9 ins without *Height* 19 ft 1 in *Wing area* 1,420 sq ft *Weight empty* 36,135 lbs *Combat weight* 65,500 lbs *Maximum speed* 287 mph at 25,000 ft *Cruising speed* 165–185 mph *Climb to 20,000 ft* 37 minutes *Service ceiling* 35,600 ft *Range* 1,700 miles *Armament* 10–11 × 0.50-in MG (eight–nine if radar fitted) + normal bomb load of 4,000lbs *Crew* 10.

LÉGENDES

1 'Little Skunkface', Boeing B-17E, 41-9019 du 97e Bomb Group; les surfaces supérieures en camouflage marron clair et vert foncé, utilisé parfois pendant l'été 1942. **2** Norden Mk.15, appareil de visée installé sur un B-24. **3** Insigne typique appliqué sur les avions USAAF; 'Yankee Diddl'er' qui doit sans doute être un avion du 97e Bomb Group. **4** Tourelle 'ballon' au creux d'un B-17. **5** 'Bombardier' au nez d'un B-17E; remarquez les emplacements pour mitrailleuses supplémentaires. **6** Mitrailleur en cabine-radio dans un B-17F 'Hell's Angels', 41-24577, VK-D du 358e Bomb Squadron, 303e Bomb Group; la boîte en bois sous le canon sert à ramasser les gargoussiers utilisés. **7** 'Avenger', un B-17 qui vola sur un raid à Naples le 4 avril 1943 avec le 97e et 301e Bomb Group. Remarquez les 21 missions indiquées sur le nez de l'appareil. 8 Lt. Kaufman du 322e B.Sqn., 91e B.Gp. en B-17F, 42-5724 nommé 'Thunderbird' et également tableau de chasse du 'Marnita No. 1', probablement l'avion précédent de Kaufman. **9** B-17Fs du 532e B.Sqn., 381e B.Gp. à Ridgewell en juillet 1943; il y a des avions 42-30034, VE-K et 42-30013, VE-E. Les chasseurs P-47 en visite ne sont pas identifiables. **10** B-17F, 42-5145 du 301e B.Gp. en vol vers Viterbo, le 28 juillet 1943; un carré jaune sur l'empennage indique le 301e. Les rayures fraîchement peintes en blanc sur l'insigne national n'ont pas de traits rouges.

11 B-24D 41-11840 'The Witch' du 343e B.Sqn. à El Kabrit, Egypte; ce Liberator s'écrasa au sol pendant le raid à Ploesti, 'Opération Tidal Wave'. **12** Un mitrailleur dans fuselage d'un Flying Fortress. **13** Mitrailleur dans fuselage d'un B-17 portant une veste 'flak' et un masque d'oxygène. **14** 'Whaletail II', B-17F 42-5845, GD-A du 534e B.Sqn., 381e B.Gp. Remarquez les traces de réparation et les noms peints sur les moteurs et hublots. **15** L'équipage de 'Old Blister Butt', un Liberator B-24D, 42-40776, à Hethel, base du 389e B.Gp. – 'Les Scorpions du Ciel'. La bombe horizontale peinte sur le tableau de missions indique le raid sur Ploesti, où on vola à tres basse altitude. **16** Sergeant James Jones, mitrailleur d'empennage dans un B-17F du 388e B.Gp. qui s'échappa miraculeusement d'un avion perdu le 16 septembre 1943. L'empennage frappa le dessus d'une colline et il fut projeté 200 pieds au-dessus de la terre; il tomba avec un parachute à moitié ouvert et n'eut qu'une blessure mineure. **17** Le YB-40, appareil sans succés, armé très lourdement; son poids le rendit trop lent pour suivre les avions de bombardement. **18** Un avion du 91e B.Gp. à Bassingbourn en train d'être repeint, le 25 septembre 1943. Le signe ancien sur l'empennage, un H dans un triangle, est celui du 306e B.Gp.; les triangles sont peints en gris clair, pas en blanc réglementaire. **19** Un tableau optimiste de chasseurs détruits, sur le nez de 'Judy', un B-17 du 379e B.Gp., novembre 1943. **20** La plupart de l'équipage abondonna le B-17G 42-39775, TS-K 'Frenisi' du 333e B.Sqn., 94e B.Gp. au-dessus de Brunswick le 11 janvier 1944; l'avion subit des dommages sévères, mais Lt. William Cely réussit à regagner Bury St. Edmunds avec l'avion.

21 La tourelle supérieure d'un B-17F; la lourde structure métallique fut réduite de taille sur le modèle B-17G. **22** Avant de faire une mission météorologique de reconnaissance en février 1943, un B-17 est arrosé d'anti-gel. **23** Peint en 'rose du désert', un B-24J, 42-73076 du 98e B.Gp. à Guardo, Italie, le 13 février 1944. Les marques du 47e Wing – 15e Air Force ne sont pas encore indiquées. **24** Un B-17G, 42-21313 du 91e B. Gp. faisant le plein à Bassingbourn le 10 février 1944; le nez court en perspex indique un avion fabriqué par Vega. Capacité interne d'essence était de 2,810 US gallons, ou 3,630 US gallons avec des réservoirs supplémentaires à la réserve de bombes. **25** 'Dazzlin' Dutchess and the Ten Dukes', un B-24H du 15e Air Force, le 15 mars 1944; la roue du nez est coincée. Le pilote atterrit sur le châssis principal et l'arrière du fuselage, après avoir envoyé son équipage au fond de l'avion pour y faire du poids. **26** Un B-17F, 42-30407 du 97e B.Gp. au-dessus de la Russie pendant 'l'Opération Frantic' le 2 juin 1944. **27** Liberators du 451e B.Gp., 49e Wing, 15e Air Force à Castelluccio, Italie, le 6 juin 1944. **28** B-17F, 42-3540 'Bacta-th' Sac' ('Retour au Lit') du 535e B.Sqn. à haute altitude. **29** B-24H, 42-7607 du 446e B.Gp. à la base de Bungay, sur le retour vers l'Allemagne le 24 novembre 1944. **30** Scène paisible à Amedola, Italie, en arrière plan un B-17G du 429e B.Sqn., 2e B.Gp., 5e Wing, 15e Air Force. Le Y sur l'empennage indique le 2e B.Gp. et le motif clé en-dessous l'escadron. Le gouvernail est bleu avec une rayure blanche, et les ailes ont des bandes bleues autour. Les trois derniers chiffres du numéro de série 44-6542 sont peints sur le nez.

31 Au premier plan, un B-17G, 44-6173, GD-H du 534e B.Sqn., 381e B.Gp. au-dessus de l'Europe en 1944. **32** La formation combattante de base de trois avions en démonstration par des B-17 du 381e B.Gp. **33** B-17G, 42-32086 du 457e B.Gp. au lavage à Glatton, base du 457e – 'The Fireballs' ('Boules de Feu'). **34** La tourelle de l'empennage d'un B-24J Liberator. **35** La tourelle du nez, fabriquée par Emerson, d'un B-24; ces tourelles réduisirent le nombre de pertes éprouvées en attaques frontales par les chasseurs. **36** Les marques rouges du 351e B.Gp. sur Liberators du 726e et 725e B.Sqns. au-dessus de l'Italie. **37** Une grue, 'faite à la maison' fabriquée par Sergeant Flitter diminua le temps nécessaire pour soulever l'hélice pesant 500 livres d'un B-24. **38** Un B-17G, 44-8483, N8-T du 600e B.Sqn., 398e B.Gp. après la chute de la roue arrière pendant un atterrissage à Nuthampstead, hiver 1944–45. Le plan de dérive rouge indique le 1e Wing, 1e Division du 8e Air Force. **39** Remise en état du moteur pour le 'Hundred Million Dollar Baby', un B-17G du 379e B.Gp. à Kimbolton le 19 avril 1945. **40** Lt. Lester Martin du 753e B.Sqn. gagna le 'Distinguished Flying Cross' pour avoir atterri sans dommages son B-24H, 42-95183, J4-U 'Briney Marlin' après la perte d'un morceau mesurant sept pieds de son aile dans une collision aérienne au-dessus de la Mer du Nord en juillet 1944.

Notes pour les planches en couleur

Page 25 Mitrailleur au .50-inch MG du fuselage d'un B-17, portant vêtements de vol, gilet de sauvetage, masque d'oxygène et un harnais de parachute. Le parachute lui-même était attaché aux boucles du harnais en cas de nécessité. Une tenue chauffante électrique était portée en dessous des vêtements extérieurs en cuir.

Page 26 en haut Cet avion a les lettres du code de l'escadron (OR – 323e BS) et le code individuel de l'avion 'T'. Il a aussi insignes nationaux, inaugurés en août 1942 et il vola depuis Bassingbourn, Cambridgeshire, Angleterre cet automne-là. 'Delta Rebel No. 2' fut abattu au-dessus de Schweinfurt le 17 août 1943.

Page 26 en bas Volant depuis Ridgewell, Essex, Angleterre, en juillet 1943, ce B-17 a le triangle et 'L' du 381e B.Gp., le Wing, ainsi que les lettres de code de l'escadron et le code individuel 'GD-M'. Les insignes nationaux à traits rouges furent portés brièvement été 1943. Les deux noms sont intéressants, l'un 'Hilda', ajouté probablement par un deuxième équipage et l'autre 'Winsome Winn', donné par l'équipage précédent. On pensa que cela portrait malheur d'en-lever les noms donnés par des équipages précédents.

Page 27 Ce Liberator vola depuis San Pancrazio, Italie en 1943. Le triangle à l'empennage indique le 47e Wing, le '2' indique le deuxième groupe dans le 'Wing' et 39 est le numéro individuel de l'avion. L'insigne est celui du 512e B.Sqn.

Page 28–29 'Flak-Eater' basé à Chelveston, Northamptonshire, Angleterre, automne 1944, a la rayure verte à l'empennage, autorisée comme un insigne supplémentaire du 305e B.Gp. en août 1944. Remarquez que dans la ligne des 18 petites bombes, sur le nez, rappelant les missions accomplies, trois sont noires; puisque ce groupe était parmi les premiers à voler en missions de nuit, les 3 bombes noires doivent s'y référer.

Page 30 Ce Liberator vola avec le 304e Wing, 15e Air Force depuis San Giovanni, Italie en 1944. L'escadron n'est pas connu, bien que l'insigne du trèfle et les capots jaunes indiquent, sans doute, L'escadron dans la groupe. Les vues détaillées démontrent (à gauche) la tourelle Emerson et (à droite) la tourelle 'Consolidated' adaptées au nez de différents lots de sur un B-24D 41-11779.

Page 31, en haut Insigne de nez de 'Memphis Belle', B-17F 41-24485, DF-A du 324e B.Sqn., 91e B.Gp., le premier bombardier du 8e Air Force à complèter 25 missions. 'Nine-O-Nine', B-17G 42-31909, OR-R du 323e B.Sqn., 91e B.Gp., qui compléta 140 missions sans perdre ou blesser un seul membre de l'équipage – un record du 8e Air Force! 'Meat Hound', B-17F 42-29524, RD-D du 423e B.Sqn., 309e B.Gp., qui fut abattu après seulement quelques missions; et l'insigne de l' escadron du 513e B.Sqn., 376e B.Gp. 'The Liberandos' – qui effecturent un raid sur Ploesti dans la basse formation célèbre – sur un B-24D 41-11779.

Page 31, en bas GMC 6 × 6 2½ ton camion citerne de la couleur utilisée par le 8e. Air Force en Angleterre.

Page 32, à gauche Un Lieutenant pilote du 8e. Air Force portant le blouson marron en cuir, très apprécié des officiers de l'équipage. L'insigne national de la casquette; 'bar' de rang à droite du col; l'insigne USAAF à gauche du col; et l'insigne de l'escadron à la poitrine, sur le devant du blouson. Les noms et insignes individuels de chaque unité et de chaque avion étaient peints ou cousus sur le blouson selon le goût de chaque individu. La casquette et la chemise sont vertes olives et la cravate et les pantalons sont beiges clairs. **Page 32 à droite** Un mécanicien typique du 8e Air Force en salopettes de travail et casquette, avec l'insigne de rang d'un caporal indiqué sur ses manches en encre indélébile.

UBERSCHRIFT

1 'Little Skunkface', Boeing B-17E, 41-9019 von der 97th Bomb Group. Die Oberflächen sind in der Tarnfarben hellbraun/dunkelgrün angestrichen worden, die ab und zu während dem Sommer 1942 zu sehen waren. **2** Norden Mk.15 Bombenrichtgerät, hier in einer B-24 eingebaut. **3** Typisches USAAF Flugzeugemblem: 'Yankee Diddl'er' wird der 97th Bomb Group zugeschrieben. **4** 'Kugelkanzel' in der Unterseite einer B-17. **5** Bombenrichter in der Vorderkanzel einer B-17E. Die Sockeln für zusatz MGs beachten! **6** Funk-station MG-Schützer in B-17F 'Hell's Angels', 41-24577, VK-D vom 358th Bomb Squadron, 303rd Bomb Group. Die Holzkiste unter der MG sammelt die Patronenhulsen. **7** 'Avenger', eine B-17 die 4. April 1943 mit der 97th oder 301st Bomb Group über Neapel eingesetzt vurde. Die 21 Einsatzembleme am Rumpf bemerken. **8** Lt. Kaufman, 322nd B. Sqn., 91st B.Gp. in B-17F, 42-5724 namens 'Thunderbird' und auch 'Marnita No. 2'. Sie trägt 9 Einsatz und 9 Luftsiegembleme auf der Rumpf und dazu die Siegestafel von 'Marnita No. 1' (angeblich Kaufmans frühere Maschine). **9** B-17Fs von 532nd B.Sqn., 381st B.Gp. in Ridgewell, Juli 1943. Die Flugzeuge 42-30034, VE-K und 42-30013, VE-E sind zu sehen. Die P-47 Jagdflugzeuge sind nicht identifizierbar. **10** B-17F, 42-5145 der 301st B. Gp. unterwegs nach Viterbo, 28. Juli 1943. Das gelbe Schwanzflossviereck bedeutet '301st'. Die neu angestrichenen weissen Balken am Hoheitsemblem sind ohne rote Umrandung.

11 B-24D, 41-11840 'The Witch', der 343rd B.Sqn., El Kabrit, Ägypten. Diese Liberator sturzte während dem Ploesti-Luftangriff ('Unternehmung Tidal Wave') ab. **12** Rumpf MG-Schützer einer B-17 Flying Fortress. **13** Rumpf MG-Schützer einer B-17 mit Panzerweste und Sauerstoffmaske. **14** 'Whaletail II', B-17F, 42-5845, GD-A der 534th B.Sqn., 381st B.Gp. Die Reparaturspuren und die Namen an den Motorhauben und um den Fenstern beachten. **15** Die Besatzung von 'Old Blister Butt', eine Liberator B-24D, 42-40776, bei Hethel, Heimatflugplatz der 389th B.Gp. ('The Sky Scorpions'). Die waagerechte Bombe auf der Siegestafel deutet an dem Ploesti-Luftangriff, den sehr tief geflogen wurde hin. **16** Sergeant James Jones, Heck MG-Schützer einer B-17F der 388th B.Gp. Als sein Flugzeug 16.September 1943 absturzte, wurde er auf wunderbare weise gerettet. Der Flugzeugschwanz stosste gegen einen Berg und er wurde in 50 Meter Hohe herausgeschleudert. Sein Fallschirm öffnete halb und er kam mit nur leichte Verletzungen davon. **17** Die unerfolgreiche YB-40, überbewaffnete Flying Fortress. Sie war so schwer, dass sis mit den Bombern nicht Schritt halten konnte. **18** Flugzeug der 91st B.Gp., Bassingbourn, erhält einen neuen Anstrich, 25.September 1943. Das alte Schwanzflossemblem ('H' innerhalb eines Dreiecks) gehört der 306th B.Gp. Die Dreiecke waren hellgrau statt, wie vorgeschrieben, Weiss gestrichen. **19** Optimistisch hochgeschätzte Siegestafel abgeschossenen Jagdflugzeuge auf 'Judy', eine B-17 der 379th B.Gp., November 1943. **20** B-17G, 42-39775, TS-K 'Frenisi' der 333rd B. Sqn., 94th B.Gp. wurde 11.Januar 1944 über Braunschweig schwer beschädigt. Fast die ganze Besatzung musste das Flugzeug verlassen, aber Lt. William Cely gelang es, seine

Maschine sicher nach Bury St. Edmunds zurückzufliegen.

21 Rückenkanzel einer B-17F. Das schwere Eisengerüst wurde auf der Ausführung B-17G vermindert. **22** Eine B-17 wird mit Frostschützmittel, vor einem Wetteraufklärungseinsatz, Februar 1943 gesprengt. **33** B-24J, 42-73076 der 98th B.Gp., Guardo, Italien, 13.Februar 1944. Das Flugzeug ist 'Wüstenrosarot' angestrichen worden. Die Embleme der 47th Wing, 15th Air Force sind noch nicht angebracht worden. **24** B-17G, 42-21313 der 91st B.Gp. beim Tanken, Bassingbourn, 10.Februar 1944. Die kurze, Kunststoff Vorderkanzel deutet an einer Vega Herstellung hin. Treibstoffinhalt (normal) 2810 US gallons, 3630 mit Zusatztanks im Bombenschacht. **25** 'Dazzlin' Dutchess & the Ten Dukes', eine B-24H der 15th Air Force, 15.Marz 1944. Der Vorderrad ist blockiert. Der Pilot musste seine Besatzung nach dem Flugzeugschwanzteil, um den Schwerpunkt der Maschine möglichst nach hinten zu verschieben beorden, bevor er die Maschine, nur auf die Hauptträder und den Flugzeugschwanzteil landen konnt. **26** B-17F, 42-30407 der 97th B.Gp. über Russland während 'Unternehmung Frantic', 2.Juni 1944. **27** Liberators der 451st B.Gp., 49th Wing, 15th Air Force; Castelluccio, Itälien, 6.Juni 1944. **28** B-17F, 42-3540, 'Bacta-th'Sack' ('Zurück ins Bett') der 535th B.Sqn. in grosses Hohe. **29** B-24H, 42-7607 der 446th B.Gp., Heimatflugplatz Bungay, unterwegs nach Deutschland, 24.November 1944. **30** Friedliche Szene in Amendola, Italien. Im Hintergrund, B-17G der 429th B.Sqn., 2nd B.Gp., 5th Wing, 15th Air Force. Der 'Y' heisst: 2nd B.Gp. Der Schlussel darunter ist ein Staffelemblem. Das Seitenruder ist blau mit einer weisse Streife versehen. Auf den Flügeln sind blau Streifen. Die letzten drei Ziffern der Standnummer erscheinen auch vorn an der Rumpfspitze.

31 B-17G, 44-6173, GD-H, 534th B.Sqn., 381st B.Gp. über Europa, 1944. **32** Die Grundformation für drei Flugzeuge, hier B-17s der 381st B.Gp. **33** 'Putz-und-Flick Stunde' für B-17G, 42-32086, 457th B.Gp. in Glatton, Heimatflugplatz der 457th, die sogenannten 'Fireballs' – 'Feuerballen'. **34** Hintere MG-Kanzel einer B-24J Liberator. **35** Vordere MG-Kanzel einer B-24. Die Kanzel wurde von Emerson hergestellt. Solche Einrichtungen vermindeten die Liberator Verluste durch Jagdflugzeugangriffe von Vorne. **36** Rotmarkierte Liberators der 351st B.Gp., 725th & 726th B.Sqns. über Italien. **37** Aufzug, von Sergeant Flitter selbstgebastelt, vermindert die Dauer des Abmontieren eines 500-Pfund Propellors einer B-24. **38** B-17G, 44-8483, N8-T der 600th B.Sqn., 398th B.Gp. nachdem der Schwanzrad bei einer Landung zu Nuthampstead, Winter 1944–45, zusammenbrach. Die rote Schwanzflosse bedeutet 1st Wing, 1st Division, 8th Air Force. **39** Motorenüberholung für 'Hundred Million Dollar Baby', eine B-17G der 379th B.Gp. in Kimbolton, 19.April 1945. **40** Lt. Lester Martin, 753rd B.Sqn., führte eine erfolgreiche Landung durch, nachdem seine B-24H, 42-95183, J4-U 'Briney Marlin' bei einem Luftzusammen-stoss über der Nordsee, Juli 1944, 2 Meter ihrer Flügelspitze verloren hatte. Dafür bekam er des Distinguished Flying Cross verliehen.

Farbtafeln

Seite 25 MG-Schützer in der Rumpf-MG-Kanzel einer B-17 mit Fluganzug, Rettungsweste, Sauerstoffmaske und Fallschirmgestell. Der Fallschirm selbst wurde nur im Notfall getragen und zwar, an den Schnallen des Fallschirmgurtzeugs angehakt. Unter dem ledernen Fluganzug wurde ein elektrischgeheizten Anzug auch getragen.

Seite 26 (Oben) Diese Maschine trägt die Staffelkennungsbuchstaben ('OR' = 323rd B.Sqn.) und den Maschine Erkennungsbuchstabe 'T'. Sie trägt auch die Hoheitsembleme die August 1942 eingeführt und auf Flugzeugen, die von Bassingbourn, Cambridgeshire, England aus im Herbst 1942 eingesetzt worden, zu sehen waren. 'Delta Rebel No. 2' wurde am 17. August 1943 über Schweinfurt abgeschossen. **Seite 26 (Unten)** Diese B-17 (Heimatflugplatz Ridgewell, Essex, England, Juli 1943) trägt, auser der Staffel – und Maschineerkennungsbuchstaben ('GD-M'), das Dreieck und Buchstabe 'L' der 381st B.Gp., 1st Wing. Die rotumrandeten Hoheitsabzeichen erschien, vorübergehend, Sommer 1943. Die zwei Namen am Flugzeug sind von Interesse. 'Hilda' wurde höchstwahrscheinlich von einer zweiter Besatzung hinzugefügt, der ursprungliche Name 'Winsome Winn' ist immer noch sichtbar. Der Aberglaube nach, brachte es Unglück, frühere Flugzeugsnamen zu entfernen.

Seite 27 Diese Liberator wurde 1943 von San Pancrazio, Italien aus eingesetzt. Das Schwanz-flossdreieck bedeutet '47th Wing', der Nummer 2 – Zweite Gruppe des Wings. '39' is der Maschineerkennungsnummer. Das Wappen gehört dem 512th B.Sqn.

Seite 28–29 'Flak Eater', Heimatflugplatz Chelveston, Northamptonshire, England (Herbst 1944), trägt die grüne Schwanzflossstreife dass, als Zusatzemblem, der 305th B.Gp. August 1944 zugestattet war. Unter den an der Rumpfspitze angemalten 18 Bombenembleme, die Einsätze bedeuten, ist es zu bemerken, dass 3 davon schwarz sind. Diese Gruppe war unter den ersten, die Nachteinsätze flogen. Es ist daraus zu entnehmen, dass die schwarze Bombenembleme an solche Nachteinsätze hindeuten.

Seite 30 Diese Liberator gehört dem 304th Wing, 15th Air Force, der 1944 von San Giovanni, Italien aus eingesetzt wurde. Der Staffel bleibt ungewiss, obwohl das Kleebattemblem und die gelben Motorhauben Anhaltspunkte dazu sind. Die Detailbilder zeigen (Links) die Emerson Kanzel und (Rechts) die Consolidated Kanzel. Diese beiden Kanzel sind auf verschiedenen Bau-serien der B-24 Liberator aufgebaut worden.

Seit 31 (Oben) Rumpfspitzenemblem der 'Memphis Belle', B-17F 41-24485, DF-A des 324th B. Sqn., 91st B.Gp. Es war das erste Bombenflugzeug, dass 25 Einsätze vollbrachte. 'Nine-O-Nine', B-17G 42-31909, OR-R des 323rd B.Sqn., 91st B.Gp. Die Maschine vollbrachte 140 Einsätze ohne Besatzungsverluste oder sogar Verletzungen – ein Record für die 8th Air Force. 'Meat Hound', B-17F 42-29524, RD-D des 423rd B.Sqn., 309th B.Gp.; sie wurde nach nur wenigen Einsätze abgeschossen. Staffelemblem des 513th B.Sqn., 376th B.Gp. 'The Liberandos', die Ploesti in dem berühmten Tiefflugeinsatz angriff. Dass Emblem befindet sich hier auf B-24D 41-11779.

Seite 31 (Unten) GMC 6 × 6 $2\frac{1}{2}$-ton Treibstofftankwagen im Tarnfarbenschema dass von der 8th Air Force in England benutzt wurde.

Seite 32 (Links) Lieutenant Pilot der US 8th Air Force. Er trägt die kurze, braunlederne Jacke, die von den Offizieren der Flugzeugbesatzungen sehr beliebt war. Nationale Mützenemblem; Dienstgradabzeichen rechts am Kragen, USAAF Abzeichen links. Das Staffelemblem erscheint vorn an der Jacke. Die Mütze und das Hemd sind Olivgrün, Krawatte und Hosen Rehfarbig.

Seite 32 (Rechts) Typische Bodenpersonal (Mechaniker) im Arbeitskittel mit Mütze. Die Corporals Dienstgradabzeichen sind mit Kopiertinte an den Ärmeln angebracht worden.

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